ATLANTIC DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
NORFOLK, VA

AIRFIELD PAVEMENT CONDITION (PCI) SURVEY

NAS KEFLAVIK, ICELAND

JULY 2001

Prepared By:

J.M. Woliver
G.E. Spaugh

Submitted By:
Pavement Evaluation Team
Geotechnical and Paving Branch
Atlantic Division
Naval Facilities Engineering Command
Norfolk, VA 23511-2699

DEPARTMENT OF THE NAVY
ATLANTIC DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
1510 GILBERT ST
NORFOLK VA 23511-2699

TELEPHONE NO.:
(757) 322-4411

IN REPLY REFER TO:
CI49: DGB: ges
28 January 2002

From: Commander, Atlantic Division, Naval Facilities Engineering Command

To: Commanding Officer, Naval Station Keflavik, Iceland

Subj.: Airfield Pavement Condition Survey, Naval Station Keflavik, Iceland

Ref: (a) NAVFACNOTE 1132 of 17 APR 79
(b) NAVFACINST 1132.14B of 31 Oct 74
(c) NAVFACENGCOM ltr 04B/04B1/MPJ Ser 84-019 of 22 Feb 84
(d) NAVFACENGCOM ltr 04B/04B1/MPJ Ser 86-342 of 30 Oct 85

Encl: (1) Subject Report

1. Enclosure (1) is forwarded to budget maintenance and repairs for the airfield pavements at Naval Air Station Keflavik, Iceland for the next ten years.

2. Enclosure (1) contains the results of visual statistical evaluation of the condition of the airfield pavements. Enclosure (1) is submitted in accordance with references (a) and (b) with modifications contained in references (c), and (d). Please call with any questions or suggestions.

D G Bryan

D.G. BRYAN, P.E.
BY DIRECTION

Copy to:
NAS Keflavik, Iceland (PWO) (8 copies)
NAS Keflavik, Iceland (AIROPS)
NFESC (Code ESC 63/Cline)
EFANORTHEAST (Code ESC 63/Schiavino)
LANTDIV (Code BD1 & BE11)

Table of Contents

List of Tables

List of Illustrations

List of Figures

Engineering Summary

The Pavement Evaluation Team from the Atlantic Division of Naval Facilities Engineering Command conducted a pavement condition survey on the airfield pavement at NAS Keflavik, Iceland in July 2001. These surveys are performed every four to five years and incorporate the use of non-destructive testing and visual inspection. This particular survey employed the use of a visual inspection only. Figure 1 indicates the pavement inspected during this survey. Non-destructive testing (NDT) was last performed on the pavement in 1996. For posterity, the 1996 load evaluation results are included in Appendix D of this report.

The purpose of this report is to provide to the station and the major claimant maintenance and repair recommendations based upon both the visual condition survey and a structural analysis of the pavements. Maintenance projects or continuing preventive maintenance should be considered for runway pavements with a Pavement Condition Index (PCI) above 70 and on taxiways and parking aprons with a PCI value above 60. Repair projects should be considered for pavements with PCI at or below the specified values or on pavements where Foreign Object Damage (FOD) is an immediate or foreseeable problem.

From the evaluation of the data collected during the July 2001 survey, active runways 11-29 and 02-20 are in very good to excellent condition with average PCI values of 77 and 87, respectively. Inactive runway 07-25 remains in excellent condition with a PCI of 100. Recent patching operations on runway 11-29 have prepared the surface for an overlay, which should be accomplished in FY2002. Due to snowplow operations, runway 02-20 has developed a smooth macro texture. Therefore, runway sections R2-2A1, 2B1, 3A, and 3B should be grooved to increase the coefficient of friction and reduce the hydroplaning potential.

The taxiway system is generally in very good condition with an average PCI of 80. Problem areas in the taxiway system are taxiway Charlie (TC-2, 3), taxiway Echo (TE-4A), taxiway Golf (TG-2B), taxiway Kilo (TK-1, 3), taxiway November (TN-5), and the Keflavik Apron taxiway (KAT-1). Within the next five years, these areas will have a PCI value that will fall below the threshold PCI, as stated above, for which repair projects should be programmed.

The aprons at NAS Keflavik are in very good condition with an average PCI of 79. The majority of the PCC aprons will require replacement of the joint sealant within the next five years. The Keflavik Apron (KA-1, 2) should be resurfaced in FY2005 when the PCI should fall below 60.

Annual routine maintenance (to include patching of isolated areas, crack sealing and herbicide application) is recommended for all pavements inspected, and will economically extend the life of the pavements. Based upon square footage of pavement,

It is recommended that $300K annually be allocated for routine maintenance at NAS Keflavik.

Table 1 summarizes the projects and associated costs to maintain the airfield over the next ten years. The costs shown are for budgeting purposes only and should be verified during the planning stage of project development. The cost for the recommended projects can potentially be reduced by bundling those of similar scope into multiple project construction packages. Discussion of the recommended projects and each section of airfield pavement are presented in Part One of this report.

Table 2 summarizes relatively minor maintenance items that should be addressed as soon as possible. These recommended actions are considered routine maintenance and will either improve pavement markings, runway lighting, minimize Foreign Object Damage potential, or extend the life of the pavements with relatively little cost. These recommendations are discussed further in the Findings and Recommendations portion of the report.

A condition survey is scheduled for NAS Keflavik in 2005 and 2009. The load-carrying capacity of the pavements will be re-evaluated in 2005 using the non-destructive test procedures used in the 1996 survey.

Table 1. Recommended Maintenance Projects, NAS Keflavik.

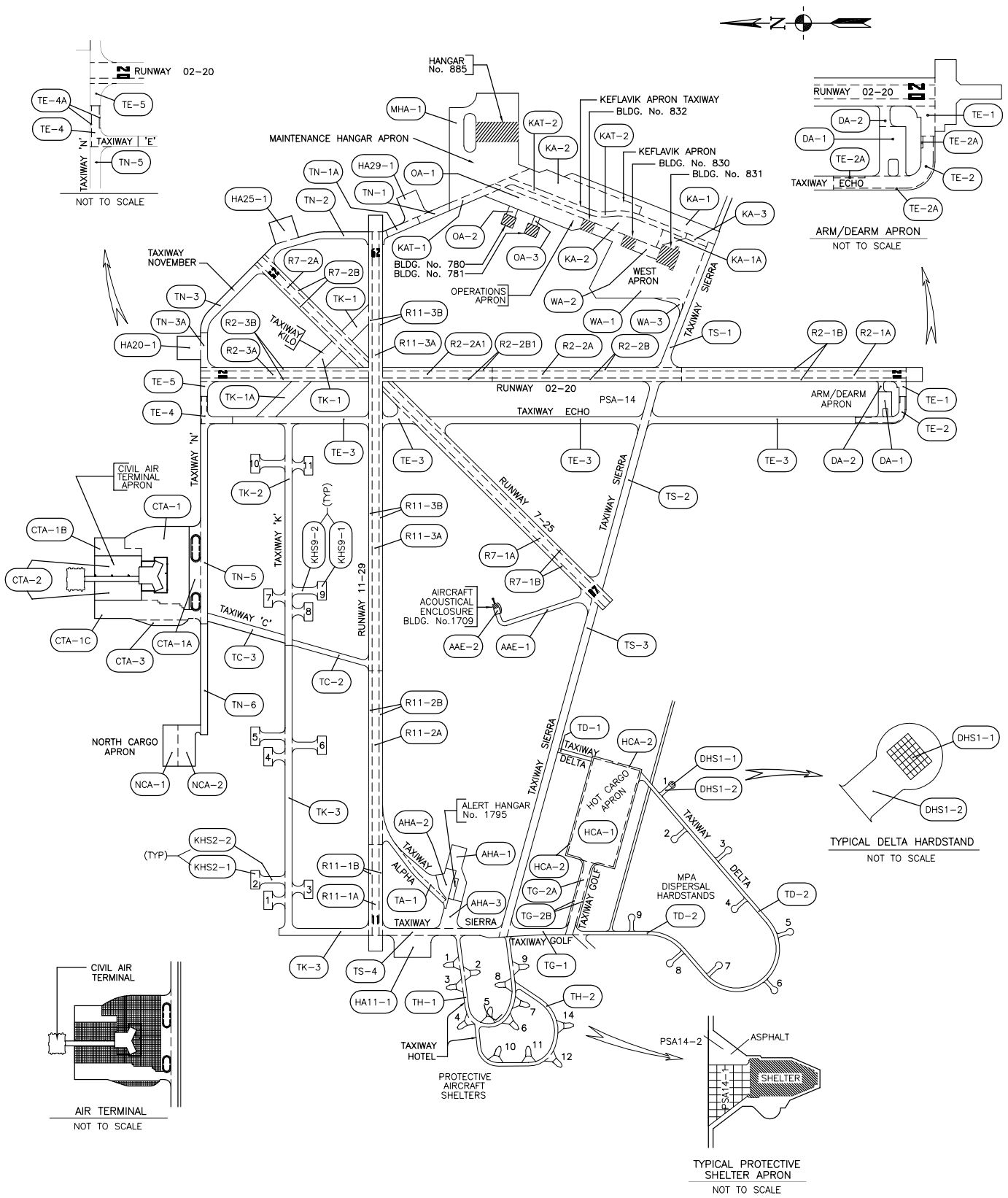
Costs shown are for budgeting purposes only and should be verified during the planning stage of project development.

Branch/Section	Action Required	Cost ($1000s)
Projects to be Initiated in FY 2002		
R-11-1, 2, 3 (All of runway)	2" AC overlay for entire length and overrun areas	$4500
Runway 02-20 Overrun	Remark overrun area	$85
TK-1*	Mill and resurface with 2" of AC.	$400
R2-2A1, 2B1, 3A, and 3B	Saw-cut groove full width of runway	$800
CTA-1, 3	Widen PCC joints and provide sealant	$650
TK-3*	Overlay with 2.5" of AC.	$825
	Total for FY 2002	**$7260**
Projects to be Initiated in FY 2003		
CTA-1B, 1C	Mill and resurface with 2.5" of AC.	$800
TN-5	Overlay with 2.5" of AC.	$525
WA-1, 2, 3*	Replace PCC joint sealant/provide miscellaneous PCC repairs	$1300
OA-1, 3	Replace PCC joint sealant/ provide miscellaneous PCC repairs	$400
MHA-1	Replace PCC joint sealant/ provide miscellaneous PCC repairs	$2100
TG-2A	Replace PCC joint sealant/ provide miscellaneous PCC repairs	$100
HCA-1	Replace PCC joint sealant/ provide miscellaneous PCC repairs	$1000
PSA1-1 to PSA14-1	Replace PCC joint sealant/PCC repairs	$250
	Total for FY 2003	**$6475**
Projects to be Initiated in FY 2004		
TC-2*	Reconstruct and widen	$2750
TC-3*	Overlay with 2" AC	$300
TE-3, 4, 4A	Overlay with 2" of AC.	$1000
R2-1A, 1B, 2A, 2B	Mill and resurface with 2" of AC.	$1850
	Total for FY 2004	**$5900**
Projects to be Initiated in FY 2005		
KA-1, 2	Mill and resurface with 2" AC.	$2300
KAT-1	Replace PCC joint sealant/ provide miscellaneous PCC repairs	$125
AAE-1	Overlay with 2" of AC.	$125
	Total for FY 2005	**$2550**
Projects to be Initiated in FY 2006		
HCA-2	Mill and Resurface with 2" of AC.	$135
TG-2B	Mill and resurface with 2" AC.	$100
	Total for FY 2006	**$235**
Projects to be Initiated in FY 2007		
AHA-1	Replace PCC joint sealant/ provide miscellaneous PCC repairs	$425
AHA-2	Mill and Resurface with 2" of AC.	$100
	Total for FY 2007	**$525**
Projects to be Initiated in FY 2008		
HA25-1	Mill and resurface with 2" of AC.	$225
HA29-1	Mill and resurface with 2" of AC.	$225
HA11-1	Overlay with 2" of AC.	$175
	Total for FY 2008	**$625**
Projects to be Initiated in FY 2009		
KHS1-1 to KHS11-1*	Replace PCC joint sealant/ provide miscellaneous PCC repairs	$750
	Total for FY 2009	**$750**
Projects to be Initiated in FY 2010		
TN-1, 2, 3	Overlay with 2" AC	$800
	Total for FY 2010	**$800**
Projects to be Initiated in FY 2011		
OA-2	Replace PCC joint sealant/PCC repairs	$500
	Total for FY 2011	**$500**

Notes:
1. See the included location plan for section locations.
2. All costs are in dollars of the fiscal year listed and were derived using FY2001 dollars escalated 3.0 % annually. Project costs are estimated **and reflect construction costs only**. See Maintenance & Repair section of this report for further details.
3. Sections in *blue* and denoted by "*" indicate that the intended use of the pavement should be considered before the recommended project is initiated and designed.

Table 2. Minor Repairs to be Accomplished Immediately.

Branch/Section	Action Required
R2-3A, 3B	Mounds occurring on Runway 02-20 within the new overlay are believed to be heaving of stones/cobbles. Excavate (not core) at a few locations to verify. This condition is similar to what can be seen on the western most portion of feature HA11-1. This may be occurring in areas of relatively thin pavement. The pavement structure in section R2-3A and 3B consists of two asphalt layers. This pavement structure could be trapping water that would contribute to the formation of the mounds. Note that mounds will deflect under POV wheels.
TS-1 at Runway 02	Re-stripe Taxiway Sierra's north sideline on east side of Runway 02-20 where taxiway edge light falls inside the marked sideline (exposing light to traffic).
R2-2A1, 2B1, 3A, and 3B	Runway 02 sections 2A1, 2B1, 3A, and 3B have a smooth surface texture. These areas should have Mu meter runs and should be monitored for friction loss. Maintenance should be provided based upon evaluation of friction measurements using guidance set forth in FAA Advisory Circular 150/5320-12C.
KA-1	Patches being laid out on KA-1 are not large enough to remedy the defects present. Enlarge patch areas to 1-foot minimum beyond distress limits.



SECTION LOCATIONS
AIRFIELD PAVEMENT CONDITION SURVEY
NAS KEFLAVIK, ICELAND

Illustration 1. Pavement Inspected during 2001 PCI Survey

GRAPHIC SCALE
0' 500' 1000' 1500' 2000' 2500'

ICELAND1.DWG

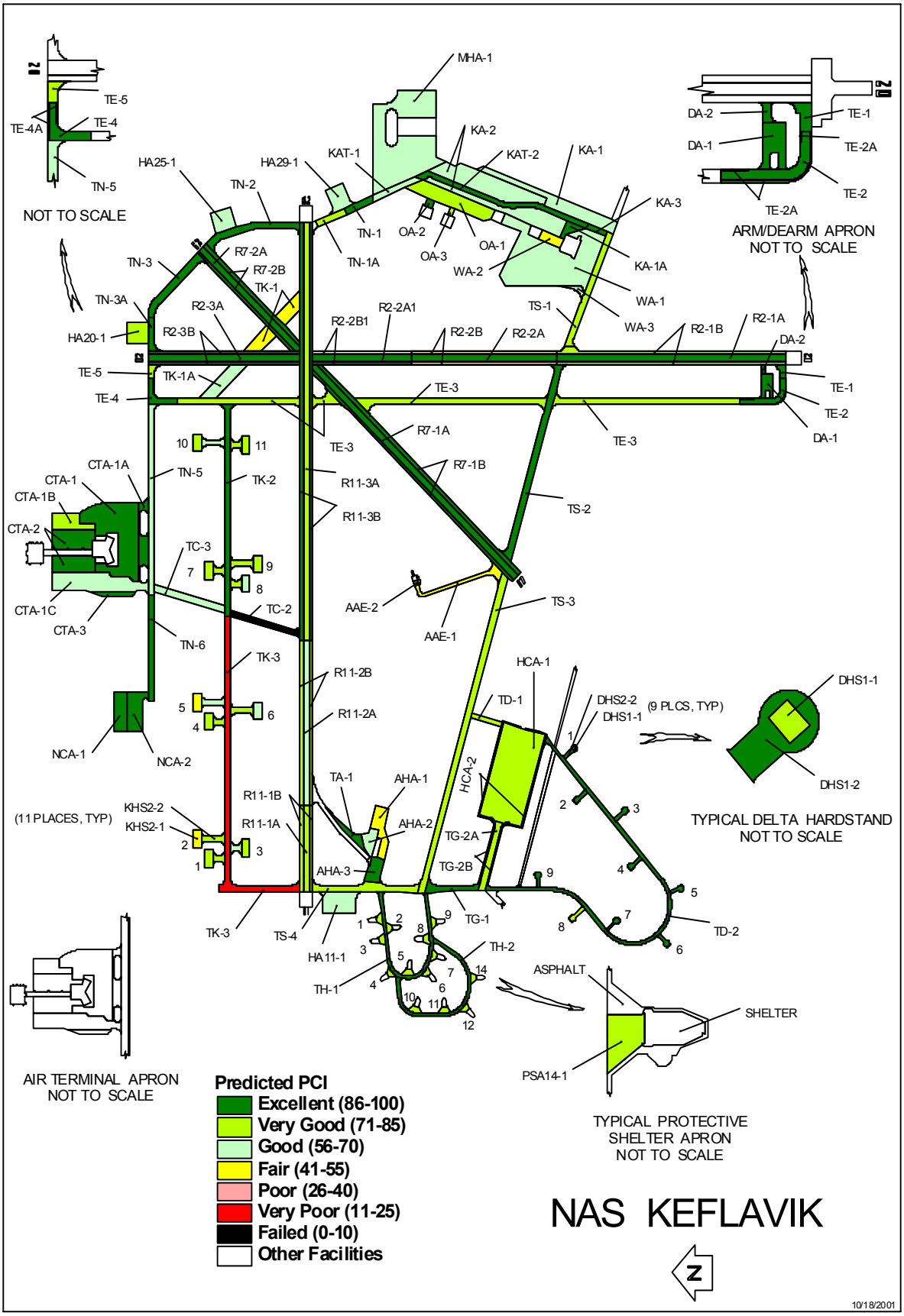


Illustration 2. Predicted PCI for September 2001 for NAS Keflavik

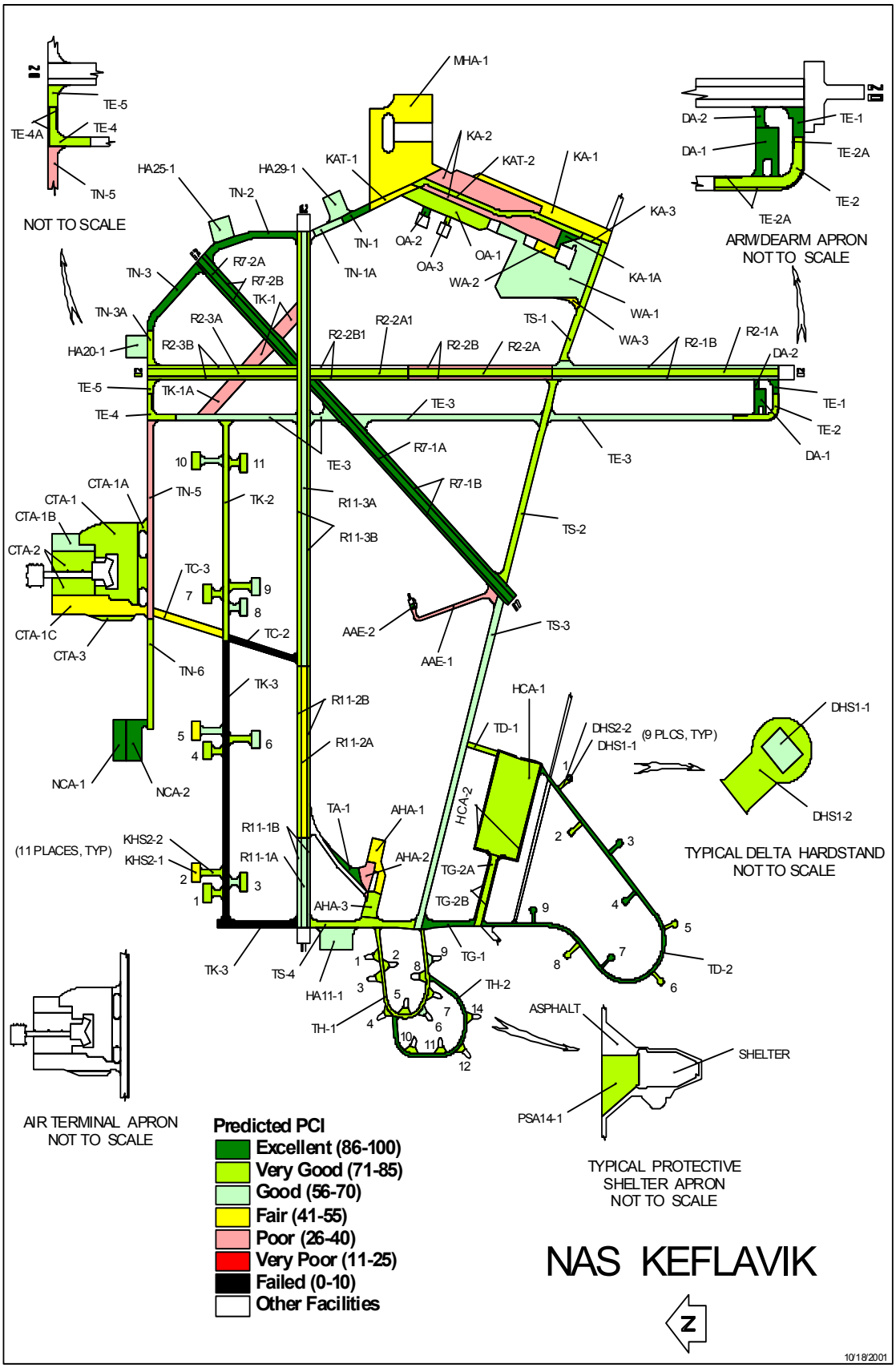


Illustration 3. Predicted PCI for September 2006 for NAS Keflavik

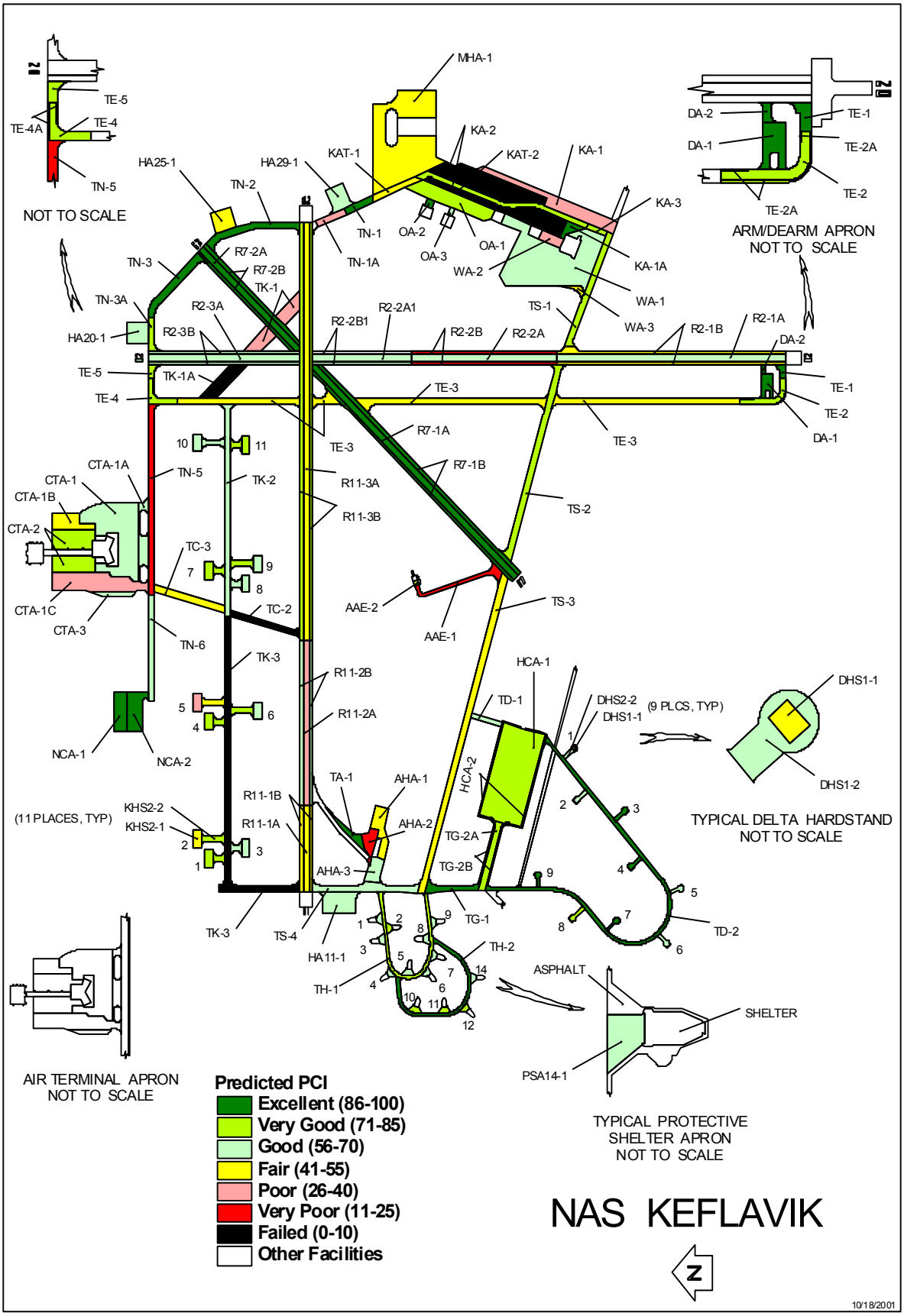


Illustration 4. Predicted PCI for September 2011 for NAS Keflavik

Introduction

Scope

A survey was conducted at NAS Keflavik, Iceland in July 2001 to determine the Pavement Condition Index (PCI) of the airfield pavement. The survey included Runways 11-29, 02-20, 07-25, and all supporting taxiways and aircraft parking aprons. The procedures for conducting the survey conform to ASTM D5340 Standard Test Method for Airport Condition Index Surveys. The purpose of this report is to provide maintenance and repair recommendations to the station and the major claimant.

Station Information

Naval Air Station Keflavik, Iceland is located approximately three miles from the town of Keflavik on the Reykjanes Peninsula in the southwestern corner of Iceland. The airfield is approximately 25 miles west of Reykjavik, the principle city and capital of Iceland. NAS Keflavik serves as the international airport for Iceland, accommodating all types of international commercial traffic and also serves as the primary hub and home to Icelandair Airlines.

Currently, there are two active runways, one inactive runway, connecting taxiways, four warm-up aprons, thirteen protective shelters, twenty-one hardstands, four military aprons, and two civilian aprons at NAS Keflavik. The active runways are runway 02-20 and 11-29. Runway 02-20 is 10,020 feet long by 200 feet wide and Runway 11-29 is 10,057 feet long by 200 feet wide. Runway 07-25 is inactive and measures 6,950 feet long by 200 feet wide. All three runways were initially constructed with asphaltic concrete in 1942/43 and subsequently lengthened and overlaid. The approximate field elevation is 171 feet above Mean Sea Level (MSL).

The climatological data used in this report was provided by the National Climatic Data Center and is presented in Appendix C. The annual rainfall in the area is 47.5 inches and is distributed evenly throughout the year. The annual snowfall is 80 inches and occurs from October to May.

A layout of the airfield and PCI section locations is shown in Illustration 1. Additional data concerning construction history of individual sections is found in Appendix A.

Survey Procedure

Section Locations
The airfield pavements are divided into sections based on design, construction history, and traffic patterns. After initially designating the sections on the airfield, each section is subdivided further into sample units. A sample unit for jointed rigid pavement is approximately 20 slabs; a sample unit for flexible pavement is an area approximately 5,000 SF.

Sample Unit Selection
The number of sample units that must be surveyed are determined from standard deviation curves developed from data collected during the development of the PCI procedure. These curves can be found in the *Interim Guide for Condition Survey Procedures (October 1985)*, prepared by the U.S. Army Corps of Engineers at Waterways Experiment Station Geotechnical Laboratory. These curves will provide an estimate of the number of samples that must be surveyed that will yield the PCI value within ± 5 points of the true mean PCI, 95% of the time.

Sample Unit Inspection
Each sample unit selected by the statistical sampling procedure is inspected. The inspection is performed by walking over the sample unit, counting and measuring existing distress, and recording the appropriate number code and severity level. For example, 43M indicates medium severity block cracking on AC pavement and 75L indicates low severity corner spalling on PCC pavement.

Numerical Condition Rating
Upon completion of the field survey, the Pavement Condition Index (PCI) is calculated from the distresses found during the survey. The overall condition rating of the section is determined by the mean PCI of all sample units within the section. The condition ratings and the corresponding PCI values are illustrated in Table 3.

PCI	Rating	Maintenance/Repair Strategy
100-85	Excellent	Routine Maintenance/Repairs
84-70	Very Good	
69-55	Good	Routine Maintenance/Repairs or Major Repairs or Total Reconstruction
54-40	Fair	
39-25	Poor	Major Repairs or Total Reconstruction
24-10	Very Poor	Total Reconstruction
<10	Failed	

Table 3. Condition Ratings and Corresponding PCI Values.

The Pavement Condition Index and the corresponding condition ratings presented in this report were developed to aid in determining the suitability of the airfield surfaces for aircraft operational requirements and to establish an unbiased, uniform basis for initiating maintenance and repair efforts. As such, condition ratings are simply visually determined

indicators of the condition of the pavement and do not represent true "condition rating" in that they do not include factors relating to pavement strengths, traffic usage, etc. For example, a pavement surface rated *Excellent* may be structurally inadequate to support a specific aircraft. The condition of a structurally sound pavement surface may be hazardous for aircraft use due to a Foreign Object Damage (FOD) problem or accelerated deterioration with continued use. If FOD is present, maintenance may be required even if the PCI values are above the maintenance threshold values. It is possible that additional measurements or modifications may be necessary or desirable in subsequent condition surveys.

For airfield pavement used by jet aircraft, Navy criterion specifies that PCI values shall exceed 70 for runways; 60 for aprons and taxiways; and 50 for any other pavement.

Exact locations of sample units surveyed along with field notes and computations are on file with:

Atlantic Division
Naval Facilities Engineering Command
Code CI49 Geotechnical and Paving Branch
1510 Gilbert St.
Norfolk, VA 23511-2699
(757)322-4411

This material can be provided upon request.

Findings and Recommendations

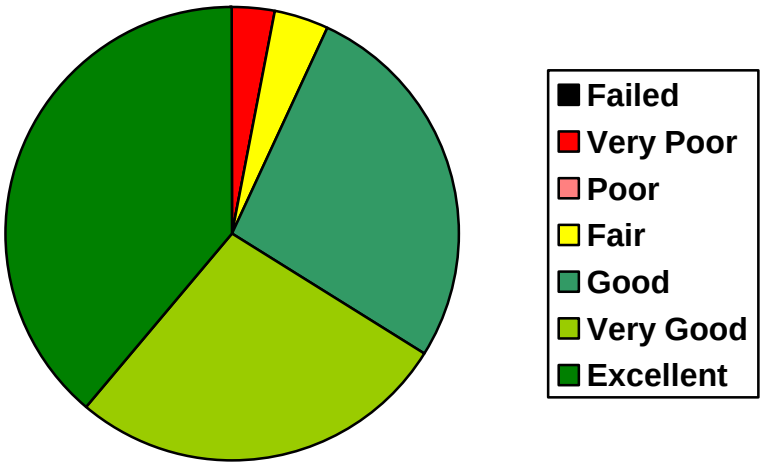


Illustration 5. Current Condition of Airfield Pavement at NAS Keflavik

Findings and Recommendations

As seen in Illustration 5, the majority of the airfield pavement at NAS Keflavik is rated as being in very good to excellent condition. The current conditions and repair recommendations are summarized herein. The recommendations presented are based upon a combination of PCI ratings, the 1996 load evaluation results, and anticipated airfield traffic, tempered with engineering judgment. Factors considered in scheduling recommended maintenance should include the relative remote location of Iceland and the economy of scale achieved by grouping projects of a similar nature.

Project submittals should be initiated with receipt of this report and accomplished over the next ten years. It is recommended that the airfield pavement be inspected again in FY2005.

General Recommendations

The term “routine maintenance”, as used herein, is defined as crack sealing and small-scale repairs, such as spall repairs, joint cleaning and sealing, grass removal, and rubber removal. Recommended repairs for joints, cracks, and spalls can be found in Appendix E. As a general note, crack sealing in asphalt concrete (AC) pavements should be performed every four to five years. Any cracking or joints in portland cement concrete (PCC) pavement should be sealed with a self-leveling silicone sealant. Also, applying seal coats on asphalt concrete (AC) pavement overruns and shoulders can economically extend the pavement life several years. It is recommended that $300K annually be allocated for routine maintenance at NAS Keflavik.

Provide routine maintenance as needed to all pavement sections not identified in a particular project herein for the next four years. Consider providing only stop-gap (short-term) maintenance, such as patching with hot-mix asphalt or other economical products, where possible to minimize costs in areas identified to be reconstructed or have an AC overlay applied. Stop-gap measures are primarily for FOD control and to keep the area serviceable until permanent reconstruction can be accomplished.

During design of the any recommended asphalt concrete overlay, a survey should be performed to verify grades and slopes are within ICAO or DoD criteria (as applicable). Any load related distress, such as alligator or slippage cracking, that exists at time of overlay design should be repaired with full depth patches, which include the recompaction of the base materials, prior to placement of the overlay. In performing these repairs, the repair area should be of large enough dimension to allow self-propelled equipment to accomplish compaction. Any medium and high severity longitudinal and transverse cracks greater than 1/4 inch in width should be sealed prior to the overlay placement to retard the reflection cracking that could occur.

Runways

Runway 02-20

Runway 02-20 at NAS Keflavik is an asphalt-surfaced runway. There are two arresting gears in use on the runway. In 2000, sections R2-2A1, 2B1, 3A, and 3B were resurfaced with two inches of asphalt. These sections are in excellent condition with a PCI of 100 and show little rubber buildup in the touchdown zones. However, there are "bubbles" in the new overlay that could be ripped off by snowplows and could form potholes to form during the winter months. From our excavations at other locations on the airfield, it is believed that these "bubbles" are from cobble-sized pieces of basaltic scoria pushing through the pavement surface. This is a natural phenomenon that can be seen at many locations on the airfield (See Figure 17) and throughout Iceland. This type of geologic occurrence is referred to as a "desert pavement." A "desert pavement" is formed when larger rocks and pebbles are expelled to the surface by shrink-swell soils, creating a rocky crust or pavement. In this case, the expulsion mechanism is freeze-thaw cycles. It is believed that this process is occurring under the relatively thin areas of pavement at the airfield. One contributing factor to this condition in this area is the pavement section. The pavement section consists of three layers (7" AC, 6" stone base, 4" AC). The second layer of asphalt most likely trapped rainwater during the resurfacing project in 2000 and provided the fuel for the freeze-thaw mechanism. It is believed that the water that had been trapped during the resurfacing project has most likely drained by now and should not continue to expel the larger stones. However, this area should be monitored for increased deterioration over the winter months. If further surface deterioration is observed, additional investigation should be performed to evaluate the condition and recommend any corrective action. ***It should be noted that this two-layer pavement structure is present in many areas on the runway and has the potential to develop the same problem.***

The surface texture or macro texture of the sections R2-2A1, 2B1, 3A, and 3B has become very smooth due to snowplow operations. These areas should be closely monitored by the Icelandic Fire department by conducting monthly wet pavement friction measurements. The department's Mark 4 Mu meter should be used to establish the rate of friction deterioration. The Mark 4 device is considered the better indicator of hydroplaning potential and it should be used 10 feet each side of each runway centerline. The tests should be performed at both 40 MPH and 60 MPH speeds during or immediately following a rain shower so that a 1mm thick wet film can form on the pavement. These results should be forwarded to LANTDIV, code CI49 for evaluation. If additional testing, using equipment that possesses a self-watering capability (more controlled conditions) is considered necessary at that time, this office can assist in planning the testing. The station should be aware of the pavement areas showing relatively poor Mu values and should monitor pilot complaints of poor braking response during wet weather. A summary of any complaints should be forwarded to LANTDIV code CI49 with the initial set of Mu measurements performed with the Mark 4 device. If the friction values fall below levels set forth by the FAA, it is recommended that these sections be saw-cut grooved across the full width of the runway.

Sections R2-1A and 2A are in very good condition with a mean PCI of 87. These areas are heavily patched. The patches are constructed well and are in good condition. The striping in these areas is obliterated from age and patching. Sections R2-1B and 2B are micro surfaced with Ralumac. These sections are in good to fair condition with an average PCI of 63. As seen in Figure 19, the Ralumac in these areas is extremely weathered and delaminating from the asphalt surface. It is expected the Ralumac will produce a FOD hazard during snowplow operations this winter. The snowplows will most likely remove any of the loose Ralumac during the winter months. However, sweeping operations should be performed with increased vigilance during the summer months until an overlay can be accomplished in these areas.

It is recommended that sections R2-1A, 1B, 2A, and 2B be overlaid with 2" of asphalt across the full width of the runway in FY2004. Prior to overlay, the Ralumac micro surface should be completely removed to assure a good bonding surface is obtained.

The overruns located at each end of this runway remain in good to excellent condition. They were resurfaced in 1999. However, the overruns are not marked with chevrons. It is recommended that they be restriped in FY2002.

Runway 11-29

The inspection of Runway 11-29 indicates that the center 130 feet of the runway is in good to very good condition with an average PCI of 73. There is a minor amount of rubber build-up at the approach end of Runway 11 and very little at the approach end of Runway 29. The striping has been almost obliterated on the Runway 11 approach and is in poor condition due to snowplow operations and patching on the remainder of the runway. The surface texture is very smooth and would most likely give low friction values. The 35 feet wide Ralumac strip along each sideline has isolated areas of missing material, apparently the result of snowplow and sweeping operations. The snowplows

will most likely remove any of the loose Ralumac during the winter months. However, sweeping operations should be performed with increased vigilance during the summer months until an overlay can be accomplished in these areas. It is recommended that the entire length (sections R11-1A, 1B, 2A, 2B, 3A, 3B) of Runway 11-29 receive a 2-inch overlay in FY2002.

The overrun pavements located at each end of Runway 11-29 are in fair to good condition. These areas contain 2 to 3-inch wide cracks (many filled with grass), many badly patched areas, and isolated areas of medium severity block cracking. Cracks should be sealed or patched annually to prevent accelerated deterioration of the pavement. These sections should be reconstructed and remarked at the same time that the overlay is performed on Runway 11-29 in FY 2002.

Runway 07-25
Runway 07-25 was last overlaid with 2 inches of AC in 1987 and continues to be in excellent condition with no defects. This pavement will continue to remain in excellent condition if infrequently used. This is due to the Iceland's nearly ideal environment for a well-drained, infrequently used pavement. The asphalt does not experience any thermal stress cycles, damage from snowplows, or fatigue due to traffic.

Taxiways

Taxiway Alpha
Taxiway Alpha was overlaid in 1989 with a 2-inch AC binder course and a 2-inch AC wearing course. The taxiway is in excellent condition with a PCI of 98. Only routine maintenance is expected to be required over the next ten years.

Taxiway Charlie
Taxiway Charlie connects Runway 11-29 to the Civilian Air Terminal apron. Section TC-2 of the taxiway is officially closed to aircraft traffic although light civilian aircraft occasionally use it. This pavement was constructed with 4 inches of AC in 1942 and has received little maintenance since that time. The surface is highly oxidized and weathered with block cracking occurring over the entire area. The general condition of this section of pavement is very poor with a PCI of 5. If this taxiway section was to be made operational pavement for military aircraft it would require reconstruction. The reconstruction will require widening it from 60 feet to 75 feet, as well as strengthening with an overlay. See the 1996 load carrying evaluation for required thickness if reconstructed, located in Appendix F. Section TC-3 is in good condition with a PCI of 66, but is predicted to require a 2" AC overlay in FY 2003.

Taxiway Delta
Taxiway Delta section TD-1 is in very good condition with a PCI of 80. The grass growing at the light bases should be treated with an herbicide to control its growth. Section TD-2 is in excellent condition with a PCI of 98. The paving joint at the sideline of the taxiway is ½" wide and grassed. It is recommended that this crack be cleaned and

sealed as part of routine maintenance. The adjoining hardstands are in excellent condition. Isolated cracks in these areas should be cleaned of debris and sealed.

Taxiway Echo
Taxiway Echo, a parallel taxiway to Runway 02-20 with a de-arming pad at the south end. The interior of the taxiway is composed of asphalt, while the ends of the taxiway are PCC pavement. The entire section TE-1 appears to be resurfaced and is in excellent condition with a PCI of 98. There are no hold short markings on this section of the taxiway.

Section TE-2 is excellent condition with a PCI of 88. The joint sealant is disbonding from the joint sidewalls and is missing in some locations. The pavement markings are essentially gone in this area. The joint sealant should be replaced as part of routine maintenance in FY 2002/2003.

Section TE-3 has numerous patches, especially at the Taxiway Sierra intersection. Many of the patches are to repair raveling areas of snowplow damage. The majority of these patches can be repaired with the less expensive Ralumac Flex-a-Fill, which has been used in many areas on the airfield. The section of TE-3 between Runways 7-25 and 11-29 has areas of alligator cracking in the wheel paths on either side of the centerline. The paving lane joints north of Sierra are greater than ¼" wide and should be sealed. The asphalt shoulders of TE-4A are in fair condition with a PCI of 53. This section, along with section TE-3, should be overlaid with 2" of asphalt in FY 2004. Prior to the overlay, all areas of alligator cracking should be removed down to the base course and reconstructed.

Section TE-4 is excellent condition with a PCI of 86. The joint sealant is disbonding from the joint sidewalls and is missing in some locations. This section should be resealed with section TE-2 in FY 2002.

Section TE-5 contains numerous patches, however, all are in very good condition with a PCI of 84. As seen in Figure 5, there is a large patch using Flex-A-Fill. This patch is extremely slick and of low viscosity at 50°F. The use of this material should be limited to the small areas and cracks, as it may pose a braking hazard to ground support equipment and aircraft. It is recommended that this section be overlaid with 2" of asphalt in FY 2004, at which time the PCI will be at or below the required PCI threshold for taxiways.

Taxiway Golf
Taxiway Golf section TG-1 is in excellent condition with a PCI of 97. The shoulders require cleaning and sealing of the cracks (the majority are 1/2" wide and contain grass). Section TG-2A is in very good condition with a PCI of 84, however, its joint sealant should be replaced in FY 2003 in order to prevent foreign material and grass from deteriorating the joint and spalling. Section TG-2B is in fair condition and requires grass to be removed from the AC interface, cracks sealed, and isolated patching of the severely cracked surface. It is recommended that the repair work for Sections TG-2A and TG-2B be accomplished under the same contract.

Taxiways Hotel
Taxiway Hotel (TH-1, TH-2) are in excellent condition with an average PCI of 95. There are isolated areas of minor weathering of the asphalt surface. The centerline markings are becoming faint. There are no sideline markings in either section, which, if added, would serve to protect the edge lights from aircraft. Both sections are predicted to remain in excellent condition for the next 10 years and are expected only to require routine maintenance.

Taxiway Kilo
Taxiway Kilo lies to the north of and parallel to Runway 11-29. Section TK-1 was originally constructed as a 200 feet wide runway in 1942/43 with a 4-inch thick AC surface. In 1952, 12 to 18 inches of stone base course material and 3.5 to 4.5 inches of AC were placed atop this section. In 1994, section TK-1A was milled to 3 inches in depth and a 3-inch thick AC surface was applied. The width of the paved surface in Section TK-1 and TK-1A is 200 feet, although the pavement is marked as a 100 feet wide taxiway with 50 feet wide shoulders.

The general condition of section TK-1 is fair. Its surface is oxidized and a considerable amount of alligator cracking exists to 35 feet each side of the taxiway centerline, a sign of structural fatigue. A utility cut patch extends across the taxiway. The grass growing at the patch edges should be immediately removed and the cracks sealed. As reported in the 1996 report, there are several mounds from the grade stakes being expulsed through the pavement surface by freeze-thaw cycles. The mounds are approximately 2 feet in diameter and up to 3 inches in height. The mounds are considered defects. The stakes should be removed and the pavement patched with a minimum of 3 inches of asphalt. It is recommended that this section receive a 4-inch overlay in FY 2002. The shoulders in this area require only a 1-½ inch to 2-inch overlay. Prior to the overlay, the grade stakes should be removed and the pavement repaired according to the aforementioned strategy.

Sections TK-1A and TK-2 are in excellent condition with PCI values of 96 and 100, respectively. These areas will require only routine maintenance over the next 10 years.

Section TK-3 was constructed in 1952/54 with a 3.5 to 4.5-inch AC surface. This section of Taxiway K carries the majority of commercial traffic to the Civilian Air Terminal. In 1986, severe raveling along longitudinal paving joints and alligator cracking were repaired. In our survey of this taxiway in July of 2001, alligator cracking, raveling along the paving joints, and deteriorating patches from past fixes were still the dominant distress (See Figures 23 and 24). At the time of our survey, the PCI value was 16. In August of 2001, a 2-inch tapered overlay was placed over the majority of the taxiway. In the 1996 load evaluation report, the results indicate that a 5" AC overlay is required over the wheel paths in the taxiway to sustain traffic over the next 10 years. See the 1996 load evaluation report located in Appendix F of this report for details. If the taxiway is to be opened to military aircraft, it is recommended that a 3-inch (minimum) overlay be provided in FY 2002 to sustain expected loads over the next ten years. Isolated patching

may be required prior to the overlay to correct any reflective alligator cracking that may have appeared in the newly constructed overlay.

Keflavik Apron Taxiway (KAT)
Keflavik Apron Taxiway extends across the Keflavik apron connecting taxiways November and Sierra. Section KAT-1 was constructed with 14-inch thick PCC in 1953/55. Currently, there are many low to medium severity joint and corner spalls that exist throughout the section. Medium to high joint sealant damage, characterized by moderate oxidation, brittleness, and disbonding from the sidewalls of the joints, exists over approximately 80% of the section. A potential for base course damage exists where the sealant is in poor condition. It is recommended that the sealant be replaced in this section in FY 2005, and concrete repairs be completed as routine maintenance.

Section KAT-2 was resurfaced in 1994 with AC and is in excellent condition with a PCI of 91. The taxiway has a rough, but not weathered, surface texture. There are minor areas of pitting and abrasion that will require routine maintenance patching over the next ten years.

Taxiway November
Taxiway November consists of Sections TN-1, 1A, 2, 3, 3A, 5, and 6. Sections TN-1, 2, and 3 received AC overlays in 1994 and are in excellent condition with PCI values ranging from 95 to 98. These pavements are expected to require a 2-inch overlay in FY 2010, primarily due to surface weathering anticipated from snow removal operations.

Sections TN-1A and 3A were constructed in 1997 of portland cement concrete. These sections remain in very good to excellent condition. The most prominent defects in section TN-1A are low severity joint and corner spalls. The joint sealant is disbonding, brittle, and missing in some areas.

Section TN-5 is located between Taxiway Echo and the Civilian Air Terminal, and is heavily used by commercial traffic. Overall the section is in fair to poor condition (PCI of 40). Section TN-5 was constructed in 1986 with 6 inches of AC on a stabilized stone base course. At present, the surface of the pavement has been severely weathered due to snow removal operations. Scraping and sweeping has created divots and slick areas throughout the surface, and the paving lane joints have deteriorated to raveling cracks. Isolated patching exists at the sections eastern portion, and there is the early signs of rutting and cracking in the wheel path lanes. Deterioration will accelerate hereon, and the PCI value for the section is predicted to be 6 in FY2001. The pavement was determined to be structurally adequate for the traffic anticipated over the next 10 years. It is recommended that isolated patching and milling be performed to 30 feet on each side of the centerline (except at the entrance to the CAT Throats and Taxiway Echo) followed by a 2” minimum thickness overlay. The finished grades at the centerline should be such that the existing pavement is strengthened by 2 inches minimum in the wheel paths, the rutting is eliminated, and the drainage of the pavement is improved. This maintenance project is recommended to be accomplished at the earliest possible date funds are

available (FY2002). Section TN-6 is the extension of Section TN-5 to the North Cargo Apron, and is predicted to remain in excellent condition for the next 10 years.

Taxiway Sierra
Taxiway Sierra lies between the Keflavik apron and the west end of runway 11-29. Section TS-1, 2, 3 & 4 received AC overlays in 1989, 1988, and 1994, respectively. All sections are in very good to excellent condition and are expected to require only routine maintenance through FY2010. Routine maintenance should include the removal of grass growing at the light bases along the taxiway shoulders and the sealing of isolated cracks as they develop. Currently, all sections have minor amounts of patching and cracking. As seen in Figure 14, a sideline light in section TS-1 is exposed to traffic due to improper sideline striping. This should be corrected as soon as possible to prevent any damage to taxiing aircraft. The striping in sections TS-2, 3, and 4 is becoming faint and should be re-established.

Aprons

Arm/De-arm Pad
Arm/De-arm Pad consists of sections DA-1 and DA-2. Both sections are in excellent condition with PCI values above 96 and require only routine maintenance over the next 10 years.

Keflavik Apron
Keflavik Apron (KA) consists of three sections, KA-1, KA-1A, and KA-2. Section KA-2 is divided by the Keflavik Apron taxiway and will therefore be discussed as KA-2 East and KA-2 West.

Section KA-1 is in good condition with a PCI value of 64. The area surrounding spots 1 through 8 is moderately weathered and contains numerous fuel spills that are deteriorating the asphalt. There are isolated areas of rutting and moderate severity cracking throughout the section. As seen in Figure 8, the eastern-most 50 feet of this section is in poor condition. It is recommended that this section area be milled and resurfaced with 2" AC in FY2005, when the PCI will fall below the recommended threshold for aprons. An alternative maintenance approach that should be considered is to mill and resurface 1-1/2" of AC and apply a fuel resistant seal coat. Expect a higher than average cost for pavement resurfacing the eastern-most area of this apron due to the utility structures that will be paved around, as well as the preparation of the surface after milling (isolated sealing of cracks and patching).

Section KA-1A was recently resurfaced and is in excellent condition with a PCI of 98. Only routine maintenance is required over the next 10 years.

Section KA-2, west of Taxiway KAT, is in good condition with a PCI value of 67. There are isolated areas of rutting, moderate severity cracking, and moderate severity weathering throughout the section. The cracks that have formed in the paving lane joints are approximately one-quarter inch wide and should be sealed as a part of routine

maintenance. There is a depression in the pavement immediately north of Building 830 that should be regraded so that water does not pond on the pavement. This area is considered a hazard to vehicles and pedestrians during periods freezing temperatures.

KA-2, east of Taxiway KAT, is also in good condition and has the same defects as the western side of Taxiway KAT. It is recommended that the entire section of KA-2 be resurfaced with 2 inches of AC at the same time section KA-1 is resurfaced in FY 2005.

West Apron
West Apron (WA-1, WA-2, and WA-3) is used primarily for the parking of Navy P-3 aircraft. Sections WA-1, WA-2, and WA-3 are all in good condition with PCI values in the low 60s. A moderate amount of joint and corner spalls exist in all sections. The joint sealant is oxidized, disbonded, and brittle in all sections as well. It is recommended that the joint sealant is replaced in FY 2003. Spall repairs should also be performed in all sections at this time.

Maintenance Hangar Apron
The Maintenance Hangar Apron (MHA-1) is 14" thick PCC pavement. The apron is in good condition with a PCI of 58. There are many corner breaks and random cracks in this section due to the large dimensions of the slabs. The joint sealant is in poor condition and warrants replacement in FY 2003. Spall and full-depth slab repairs should also be completed at this time.

Operations Apron
Operations Apron (OA) PCC pavement consists of sections OA-1, OA-2 and OA-3. All sections are in very good to excellent condition. In FY 2003, a project should be initiated to repair all the corner and joint spalls. The joint sealant of section OA-1and OA-3 should also be replaced at that time. Routine maintenance is all that is expected for section OA-2 over the next ten years.

Hold Areas 11, 20, 25 and 29
Hold Areas 11, 20, 25 and 29 (HA11-1, HA20-1, HA25-1 and HA29-1) were constructed with 4-inches of AC in 1952/54. All are believed to have received 3" of AC overlay since construction, however the dates of overlay are not known. The relatively low PCI values associated with these sections are due to the surface pitting, abrasion, random cracking and isolated jet blast damage. Routine maintenance (primarily sealing of cracks less than 2" in width and patching of raveled joints and cracks greater than 2" in width) is recommended for these sections through FY 2008. At that time HA11-1, HA29-1, and HA25-1 should be overlaid or resurfaced with 2" of AC.

Alert Hangar Apron
Alert Hangar Apron (AHA-1), to the east and south of the hangar, is 10-inch thick PCC pavement. The southeastern portion of this section was reconstructed in the early 1990s. The overall condition of the section is fair. Patches and random cracking exist on approximately 40 percent of the slabs. Most of the cracks have previously been sealed but the sealant has oxidized and become dislodged in some areas. The joints in the

pavement on the south side of the hangar are in the poorest condition, with the majority spalled and containing grass. Approximately one-third of the joint and corner spalls recorded are medium to high severity and considered to be high FOD potential. It is recommended that the joints and cracks be cleaned and sealed in FY 2007. Repairs to the joint and corner spalls should also be completed at this time.

Section AHA-2, to the west of the hangar, is in good condition with a PCI value of 67. The taxi-lanes into the hangar bays received an AC overlay in 1995 and are in good condition. However, recent patching is in poor shape. The wheel paths in the taxi-lanes are beginning to show alligator cracking near hangar doors 60 and 61. The older AC surfaces have random cracks that are approximately three-eighths of an inch wide. In FY 2007 this area should be milled to 2" depth and resurfaced with AC.

Hot Cargo Apron
Hot Cargo Apron (HCA-1) consists of 14-inch thick PCC and 20-foot wide asphalt shoulders (HCA-2). HCA-1 and HCA-2 are in very good to fair condition with PCI values of 83 and 41, respectively. The majority of the defects in HCA-1 are minor joint and corner spalls. The joint sealant is disbonding and splitting in some areas, as seen in Figure 2. The splitting is a cohesive failure due to the lack of backer rod in the joint. It is recommended that the spalls be repaired and the joint sealant in HCA-1 be replaced in FY 2003.

The AC shoulders contain random and paving lane cracks that are approximately one-half inch in width. Approximately 200 feet of the 20 feet wide shoulder is broken up. The majority of these cracks contain grass. Routine maintenance should include the removal of grass and the sealing of these joints to prevent accelerated deterioration of the pavement. It is recommended that the shoulders be milled and resurfaced with 2" of asphalt in FY 2005.

Aircraft Acoustical Enclosure Taxiway and Apron
Aircraft Acoustical Enclosure Taxiway (AAE-1) and apron (AAE-2) are AC and PCC pavements, respectively. Section AAE-2 is in excellent condition with a PCI value of 92. The pavement in this section has very few defects and is expected to stay in excellent condition through 2006. The joint sealant is becoming hard and brittle. Only routine maintenance is expected over the next ten years.

Section AAE-1 is in good condition with a PCI of 55. The taxiway contains random cracks and an irregular surface from heaving stones that will eventually protrude from the surface. The shoulders of the taxiway are alligator cracked and are also heaving stones through the pavement. It is recommended that this taxiway receive random full depth patching followed by a 2-inch overlay in FY 2005.

Taxiway Hotel Protective Shelter Aprons
Taxiways Hotel Protective Shelter aprons consist of 14 PCC sections (PSA1-1 through PSA14-1) and 14 AC sections (PSA1-2 through PSA14-2) along Taxiway Hotel. All sections are in very good to excellent condition. The joint sealant in the PSA1-1 through

PSA9-1 is in poor condition and should be replaced in FY 2003. Isolated spall repairs should also be completed on all sections at this time.

Taxiway Delta Hardstands
Taxiway Delta Hardstands consist of 9 PCC aprons (DHS1-1 through DHS9-1 and) and 9 AC taxiways (DHS1-2 through DHS9-2) along Taxiway Delta. All of these sections are expected to remain in very good to excellent condition over the next ten years. Only routine maintenance is expected to be required.

Taxiway Kilo Hardstands
Taxiway Kilo Hardstands consist of 11 PCC aprons (KHS1-1 through KHS11-1) and 11 AC taxiways (KHS1-2 through KHS11-2) along Taxiway Kilo. Other than the occasional civilian aircraft, these areas receive very little traffic. Overall, the AC and PCC surfaces are in good to very good condition. There are numerous spalls and isolated slabs which required patching. Therefore, the maintenance effort should concentrate on the PCC portion of these hardstands. The majority of the defects found are located in KHS2-1 and KHS5-1. Replacement of the joint sealant and concrete repairs in all of the PCC hardstand sections should be performed in FY 2009. Only routine maintenance is expected to be required until that time is reached.

Civilian Terminal Apron
The Civilian Terminal Apron (CTA) consists of six sections, CTA-1A, 1B, 1C, 2, and 3. Overall, the apron is excellent condition with an average PCI of 85. This apron generally receives wide body Boeing and Airbus commercial passenger aircraft.

Section CTA-1 is a newly constructed PCC apron surround the new terminal extension. This apron receives the majority of the international, commercial passenger traffic. This area is in excellent condition. However, the joints have not been widened and sealed and are beginning to spall (See Figure 3). It is recommended that the joints be widened and sealed as soon as possible to prevent any further spalling and potential for producing FOD. The strip drain in this area is suspected to be non-airfield rated due to the cracking of the grate, as seen in Figure 1, at the supports. This should be investigated immediately and replaced if found to be inadequate to handle large aircraft wheel loads.

Section CTA-1A is the newly constructed asphalt access throats to the terminal apron. This section is in excellent condition. Only routine maintenance is expected over the next eight years.

Section CTA-1B is the northeast section of asphalt on the terminal apron. This section is in very good condition with a PCI value of 83. The AC surface is weathered and polished in areas due to snow removal operations. Only routine maintenance is required over the next eight years.

Section CTA-1C is the northwest section of asphalt on the terminal apron. This section is in good condition with a PCI value of 62. As seen in Figure 18, the AC surface is

weathered, polished, and heavily patched. It is recommended that this area be milled and resurfaced with 2-inches of AC in FY 2005.

Section CTA-2 is the PCC apron adjacent to the main terminal. This pavement is in very good condition with a PCI value of 86. Apply routine maintenance to this section; anticipate replacing the joint sealant in FY2005.

Section CTA-3 is a new PCC section added for large aircraft turning into the new terminal extension. This section is in excellent condition. However, the joints are in the same condition as those existing on section CTA-1. It is recommended that these joints also be widened and sealed as soon as possible to prevent any further spalling and potential for producing FOD.

North Cargo Apron
North Cargo Apron consists of sections NCA-1 (PCC) and NCA-2 (AC). Both sections are in very good to excellent condition. Section NCA-1 has a minor amount of spalls. Section NCA-2 has a minor amount of cracking in the paving lane joints. The apron is expected to require only routine maintenance over the next 10 years.

Figure 1. Stress crack on strip drain grate on east side of section CTA-1.

Figure 2. Cohesive failure in joint sealant on HCA-1.

Figure 3. Unfinished joints on CTA-1.

Figure 4. CTA-1 looking south.

Figure 5. Flex-a-Fill becoming extremely slick and flowable at 50°F.

Figure 6. Joint spalling on CTA-1.

Figure 7. Section TE-5 looking east. Note the large crack width.

Figure 8. Potholes in the eastmost 50 feet of section KA-1.

Figure 9. Recently completed patches on Runway 11-29.

Figure 10. Taxiway D hardstand.

Figure 11. Improperly patched snowplow divot.

Figure 12. Poor asphalt mix in section TE-5.

Figure 13. Deterioration of Ralumac on east sideline of Runway 02-20 .

Figure 14. Exposed sideline light on North sideline of TS-1.

Figure 15. Raveling Ralumac on east sideline of Runway 02-20.

Figure 16. Raveling surface and crack at the paving lane joint on AHA-2.

Figure 17. Rocks, the causative factor of the bubbles in R2-3A, being expulsed through the pavement in the west overrun of 11-29.

Figure 18. Patching in section CTA-1C.

Figure 19. Deteriorating Ralumac on the west sideline of Runway 02-20.

Figure 20. West sideline of Runway 02-20.

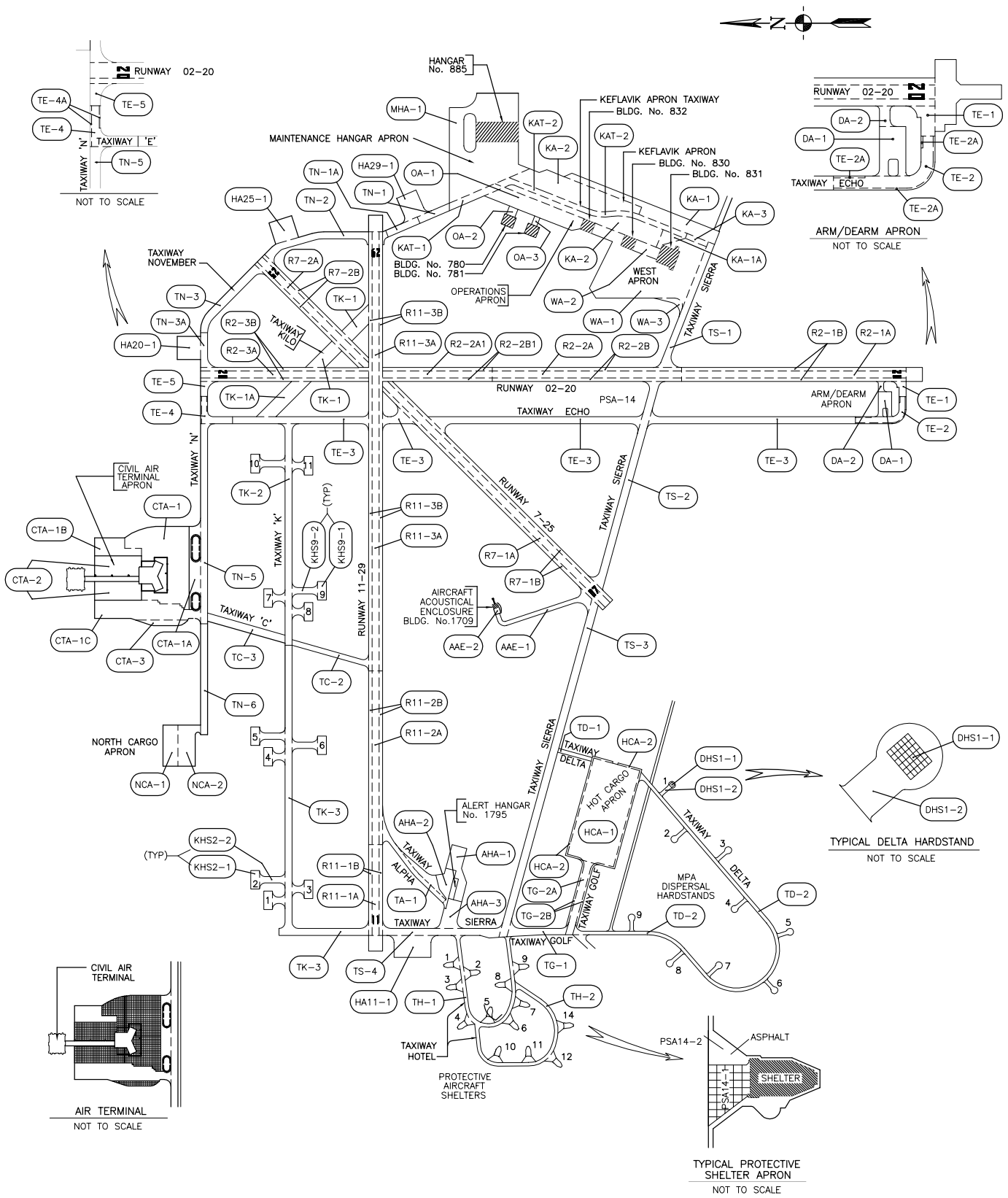
Figure 21. Bubbles, suspected to be rocks being heaved by frost, located in section R2-3A.

Figure 22. Minor rubber build-up at the arresting gear on Runway 02-20.

Figure 23. Alligator cracking on Taxiway Kilo.

Figure 24. Alligator cracking through the patches in TK-3.

Inspection Reports and Numerical Results



SECTION LOCATIONS
AIRFIELD PAVEMENT CONDITION SURVEY
NAS KEFLAVIK, ICELAND

Illustration 6. Section Layout Plan

GRAPHIC SCALE

0' 500' 1000' 1500' 2000' 2500'

ICELAND1.DWG

PCI Summary

Naval Station Keflavik, Iceland

2001 PCI Inspection

Branch ID	Section ID	Last Construction Date	Surface	Use	Rank	True Area (SF)	Last Inspection date	Age at Inspection	PCI 2001	Predicted PCI 2006	Predicted PCI 2011
AAE	1	8/1/1989	AAC	APRON	P	77,000.00	7/15/2001	12	55	36	17
AAE	2	8/1/1989	PCC	APRON	P	10,500.00	7/15/2001	12	92	89	85
AHA	1	7/1/1954	PCC	APRON	P	156,800.00	7/15/2001	48	52	47	42
AHA	2	7/1/1995	AC	APRON	P	180,000.00	7/15/2001	6	67	40	12
AHA	3	7/1/1995	AAC	APRON	P	85,462.00	7/15/2001	6	100	85	70
CTA	1	10/1/1998	PCC	APRON	P	553,102.00	7/15/2001	3	88	73	58
CTA	1A	8/1/1998	AC	APRON	P	99,859.00	7/15/2001	3	100	85	70
CTA	1B	8/1/1998	AC	APRON	P	118,728.00	7/15/2001	3	83	68	53
CTA	1C	8/1/1986	AC	APRON	P	313,344.00	7/15/2001	15	62	49	37
CTA	2	8/1/1986	PCC	APRON	P	321,775.01	7/15/2001	15	86	81	77
CTA	3	10/1/1998	PCC	APRON	P	41,318.00	7/15/2001	3	88	73	58
DA	1	8/1/1991	PCC	APRON	P	53,349.00	7/15/2001	10	98	97	96
DA	2	8/1/1994	AC	APRON	P	12,821.00	7/15/2001	7	96	93	90
DHS1	1	7/1/1983	PCC	APRON	P	8,550.00	7/15/2001	18	71	63	55
DHS1	2	7/1/1983	AC	APRON	P	21,342.00	7/15/2001	18	100	85	70
DHS2	1	7/1/1983	PCC	APRON	P	8,550.00	7/15/2001	18	92	90	88
DHS2	2	7/1/1983	AC	APRON	P	21,342.00	7/15/2001	18	100	85	70
DHS3	1	7/1/1983	PCC	APRON	P	8,550.00	7/15/2001	18	89	86	83
DHS3	2	7/1/1983	AC	APRON	P	21,342.00	7/15/2001	18	98	97	97
DHS4	1	7/1/1983	PCC	APRON	P	8,550.00	7/15/2001	18	93	91	89
DHS4	2	7/1/1983	AC	APRON	P	21,342.00	7/15/2001	18	98	97	97
DHS5	1	7/1/1983	PCC	APRON	P	8,550.00	7/15/2001	18	66	57	47
DHS5	2	7/1/1983	AC	APRON	P	21,342.00	7/15/2001	18	100	85	70
DHS6	1	7/1/1983	PCC	APRON	P	8,550.00	7/15/2001	18	91	89	86
DHS6	2	7/1/1983	AC	APRON	P	21,342.00	7/15/2001	18	100	85	70
DHS7	1	7/1/1983	PCC	APRON	P	8,550.00	7/15/2001	18	78	72	66
DHS7	2	7/1/1983	AC	APRON	P	21,342.00	7/15/2001	18	98	97	97
DHS8	1	7/1/1983	PCC	APRON	P	8,550.00	7/15/2001	18	95	94	92
DHS8	2	7/1/1983	AC	APRON	P	21,342.00	7/15/2001	18	83	78	74
DHS9	1	7/1/1983	PCC	APRON	P	8,550.00	7/15/2001	18	70	62	53
DHS9	2	7/1/1983	AC	APRON	P	21,342.00	7/15/2001	18	98	97	97
HA11	1	7/1/1954	AC	APRON	P	128,747.00	7/15/2001	47	68	65	61
HA20	1	7/1/1954	AC	APRON	P	126,657.00	7/15/2001	47	73	70	67
HA25	1	7/1/1954	AC	APRON	P	121,403.00	7/15/2001	47	61	57	53
HA29	1	7/1/1954	AC	APRON	P	126,651.00	7/15/2001	47	66	62	59
HCA	1	7/1/1955	PCC	APRON	P	962,500.00	7/15/2001	46	83	81	79
HCA	2	8/1/1955	AC	APRON	S	86,801.00	7/15/2001	46	41	35	28
KA	1	7/1/1986	AAC	APRON	P	429,800.00	7/15/2001	15	64	52	40
KA	1A	7/1/1996	AAC	APRON	P	64,009.00	7/15/2001	5	98	96	94
KA	2	7/1/1956	AAC	APRON	P	753,411.00	7/15/2001	5	67	34	2
KAT	1	7/1/1954	PCC	TAXIWAY	P	85,448.00	7/15/2001	47	56	51	47
KAT	2	7/1/1994	AAC	TAXIWAY	P	237,891.00	7/15/2001	7	91	85	78

PCI Summary

Naval Station Keflavik, Iceland

2001 PCI Inspection

Branch ID	Section ID	Last Construction Date	Surface	Use	Rank	True Area (SF)	Last Inspection date	Age at Inspection	PCI 2001	Predicted PCI 2006	Predicted PCI 2011
KHS1	1	7/1/1954	PCC	APRON	P	39,200.00	7/15/2001	47	77	75	72
KHS1	2	7/1/1954	AC	APRON	P	16,829.00	7/15/2001	47	80	78	76
KHS10	1	7/1/1954	PCC	APRON	P	39,200.00	7/15/2001	47	74	71	68
KHS10	2	7/1/1954	AC	APRON	P	32,165.00	7/15/2001	47	64	60	56
KHS11	1	7/1/1954	PCC	APRON	P	39,200.00	7/15/2001	47	81	79	77
KHS11	2	7/1/1954	AC	APRON	P	16,829.00	7/15/2001	47	85	83	82
KHS2	1	7/1/1954	PCC	APRON	P	39,200.00	7/15/2001	47	52	47	42
KHS2	2	7/1/1954	AC	APRON	P	32,165.00	7/15/2001	47	79	77	75
KHS3	1	7/1/1954	PCC	APRON	P	39,200.00	7/15/2001	47	74	71	68
KHS3	2	7/1/1954	AC	APRON	P	16,829.00	7/15/2001	47	68	65	61
KHS4	1	7/1/1954	PCC	APRON	P	39,200.00	7/15/2001	47	76	73	71
KHS4	2	7/1/1954	AC	APRON	P	16,829.00	7/15/2001	47	76	73	71
KHS5	1	7/1/1954	PCC	APRON	P	39,200.00	7/15/2001	47	48	42	37
KHS5	2	7/1/1954	AC	APRON	P	32,165.00	7/15/2001	47	63	59	55
KHS6	1	7/1/1954	PCC	APRON	P	39,200.00	7/15/2001	47	68	65	61
KHS6	2	7/1/1954	AC	APRON	P	32,165.00	7/15/2001	47	85	83	82
KHS7	1	7/1/1954	PCC	APRON	P	39,200.00	7/15/2001	47	82	80	78
KHS7	2	7/1/1954	AC	APRON	P	16,829.00	7/15/2001	47	81	79	77
KHS8	1	7/1/1954	PCC	APRON	P	39,200.00	7/15/2001	47	68	65	61
KHS8	2	7/1/1954	AC	APRON	P	16,829.00	7/15/2001	47	73	70	67
KHS9	1	7/1/1954	PCC	APRON	P	39,200.00	7/15/2001	47	71	68	65
KHS9	2	7/1/1954	AC	APRON	P	32,165.00	7/15/2001	47	85	83	82
MHA	1	7/1/1954	PCC	APRON	P	1,276,122.04	7/15/2001	47	59	55	50
NCA	1	7/1/1990	PCC	APRON	P	123,750.00	7/15/2001	11	94	91	89
NCA	2	7/1/1990	AC	APRON	P	132,350.00	7/15/2001	11	99	99	98
OA	1	7/1/1954	PCC	APRON	P	257,000.00	7/15/2001	47	77	75	72
OA	2	8/15/1991	PCC	APRON	P	16,254.00	7/15/2001	10	98	97	96
OA	3	8/15/1979	PCC	APRON	P	10,265.00	7/15/2001	22	79	74	69
PSA1	1	8/1/1985	PCC	APRON	P	9,500.00	7/15/2001	16	81	75	69
PSA10	1	8/1/1985	PCC	APRON	P	9,500.00	7/15/2001	16	85	80	76
PSA11	1	8/1/1985	PCC	APRON	P	9,500.00	7/15/2001	16	85	80	76
PSA12	1	8/1/1985	PCC	APRON	P	9,500.00	7/15/2001	16	85	80	76
PSA14	1	8/1/1985	PCC	APRON	P	9,500.00	7/15/2001	16	80	74	67
PSA2	1	8/1/1985	PCC	APRON	P	9,500.00	7/15/2001	16	83	78	72
PSA3	1	8/1/1985	PCC	APRON	P	9,500.00	7/15/2001	16	79	72	66
PSA4	1	8/1/1985	PCC	APRON	P	9,500.00	7/15/2001	16	78	71	64
PSA5	1	8/1/1985	PCC	APRON	P	9,500.00	7/15/2001	16	79	72	66
PSA6	1	8/1/1985	PCC	APRON	P	9,500.00	7/15/2001	16	77	70	63
PSA7	1	8/1/1985	PCC	APRON	P	9,500.00	7/15/2001	16	79	72	66
PSA8	1	8/1/1985	PCC	APRON	P	9,500.00	7/15/2001	16	81	75	69
PSA9	1	8/1/1985	PCC	APRON	P	9,500.00	7/15/2001	16	75	67	59

PCI Summary

Naval Station Keflavik, Iceland

2001 PCI Inspection

Branch ID	Section ID	Last Construction Date	Surface	Use	Rank	True Area (SF)	Last Inspection date	Age at Inspection	PCI 2001	Predicted PCI 2006	Predicted PCI 2011
R11	1A	7/1/1993	AC	RUNWAY	P	141,500.00	7/15/2001	8	74	58	42
R11	1B	7/1/1993	AC	RUNWAY	P	141,500.00	7/15/2001	8	76	61	46
R11	2A	7/1/1993	AC	RUNWAY	P	238,500.00	7/15/2001	8	68	48	28
R11	2B	7/1/1993	AC	RUNWAY	P	238,500.00	7/15/2001	8	84	74	64
R11	3A	7/1/1993	AC	RUNWAY	P	623,500.00	7/15/2001	8	77	63	48
R11	3B	7/1/1993	AC	RUNWAY	P	623,500.00	7/15/2001	8	88	81	73
R2	1A	7/1/1994	AC	RUNWAY	P	350,000.00	7/15/2001	7	86	76	66
R2	1B	7/1/1984	AC	RUNWAY	P	350,000.00	7/15/2001	17	72	64	56
R2	2A	7/1/1994	AC	RUNWAY	P	241,000.00	7/15/2001	7	87	78	69
R2	2A1	6/15/2000	AAC	RUNWAY	P	156,500.00	7/15/2001	1	100	85	70
R2	2B	7/1/1984	AC	RUNWAY	P	241,000.00	7/15/2001	17	53	39	25
R2	2B1	6/15/2000	AAC	RUNWAY	P	156,500.00	7/15/2001	1	100	85	70
R2	3A	6/15/2000	AAC	RUNWAY	P	240,000.00	7/15/2001	1	100	85	70
R2	3B	6/15/2000	AAC	RUNWAY	P	240,000.00	7/15/2001	1	100	85	70
R7	1A	7/1/1987	AC	RUNWAY	P	442,900.00	7/15/2001	14	98	97	97
R7	1B	7/1/1987	AC	RUNWAY	P	447,900.00	7/15/2001	14	96	95	93
R7	2A	7/1/1987	AC	RUNWAY	P	221,500.00	7/15/2001	14	99	99	98
R7	2B	7/1/1987	AC	RUNWAY	P	241,000.00	7/15/2001	14	98	97	97
TA	1	7/1/1989	AC	TAXIWAY	P	148,395.00	7/15/2001	12	98	97	96
TC	2	7/1/1942	AC	TAXIWAY	P	68,692.00	7/15/2001	59	5	0	0
TC	3	7/1/1986	AC	TAXIWAY	P	115,201.00	7/15/2001	15	66	55	43
TD	1	7/15/1983	AC	TAXIWAY	P	41,488.00	7/15/2001	18	80	74	69
TD	2	7/15/1983	AC	TAXIWAY	P	517,512.00	7/15/2001	18	98	97	97
TE	1	8/1/1994	AC	TAXIWAY	P	25,927.00	7/15/2001	7	98	97	95
TE	2	8/1/1991	PCC	TAXIWAY	P	91,287.00	7/15/2001	10	88	82	76
TE	2A	8/1/1991	AC	TAXIWAY	P	15,000.00	7/15/2001	10	89	83	78
TE	3	8/1/1994	AC	TAXIWAY	P	658,741.00	7/15/2001	7	81	67	54
TE	4	8/1/1991	PCC	TAXIWAY	P	66,779.00	7/15/2001	10	86	79	72
TE	4A	8/1/1991	AC	TAXIWAY	P	8,200.00	7/15/2001	10	53	29	6
TE	5	8/1/1987	AC	TAXIWAY	P	25,927.00	7/15/2001	14	84	78	73
TG	1	7/1/1987	AC	TAXIWAY	P	100,489.00	7/15/2001	14	97	96	95
TG	2A	7/1/1955	PCC	TAXIWAY	P	85,438.00	7/15/2001	46	84	82	81
TG	2B	8/1/1955	AC	TAXIWAY	P	44,622.00	7/15/2001	46	38	31	25
TH	1	8/1/1993	AC	TAXIWAY	P	172,542.00	7/15/2001	8	91	85	80
TH	2	8/1/1993	AC	TAXIWAY	P	157,428.00	7/15/2001	8	99	98	98
TK	1	7/1/1952	AC	TAXIWAY	P	224,293.00	7/15/2001	49	45	39	34
TK	1A	7/1/1994	AC	TAXIWAY	P	143,690.00	7/15/2001	7	60	32	3
TK	2	7/1/1986	AC	TAXIWAY	P	328,014.00	7/15/2001	15	100	85	70
TK	3	7/1/1954	AC	TAXIWAY	P	530,005.00	7/15/2001	47	16	7	0

PCI Summary

Naval Station Keflavik, Iceland
2001 PCI Inspection

Branch ID	Section ID	Last Construction Date	Surface	Use	Rank	True Area (SF)	Last Inspection date	Age at Inspection	PCI 2001	Predicted PCI 2006	Predicted PCI 2011
TN	1	7/1/1994	AC	TAXIWAY	P	65,351.00	7/15/2001	7	95	91	88
TN	1A	6/1/1997	PCC	TAXIWAY	P	35,843.00	7/15/2001	4	82	60	38
TN	2	7/1/1994	AC	TAXIWAY	P	162,491.00	7/15/2001	7	98	97	95
TN	3	7/1/1994	AC	TAXIWAY	P	166,263.00	7/15/2001	7	95	91	88
TN	3A	6/1/1997	PCC	TAXIWAY	P	36,208.00	7/15/2001	4	93	85	76
TN	5	7/1/1994	AC	TAXIWAY	P	290,507.00	7/15/2001	7	64	38	13
TN	6	8/1/1990	AC	TAXIWAY	P	123,100.00	7/15/2001	11	100	85	70
TS	1	7/1/1989	AC	TAXIWAY	P	191,500.00	7/15/2001	12	85	79	73
TS	2	7/1/1988	AC	TAXIWAY	P	304,300.00	7/15/2001	13	87	82	77
TS	3	7/1/1994	AC	TAXIWAY	P	489,800.00	7/15/2001	7	80	66	52
TS	4	7/1/1994	AC	TAXIWAY	P	170,000.00	7/15/2001	7	84	73	61
WA	1	7/1/1955	PCC	APRON	P	845,119.00	7/15/2001	46	69	66	62
WA	2	7/1/1980	PCC	APRON	P	38,400.00	7/15/2001	21	55	44	34
WA	3	7/1/1980	PCC	APRON	P	28,127.00	7/15/2001	21	64	55	47

Note on the predition of PCI values reported herein - The Paver program uses a mathematical model to predict the pavement PCI values. The predicted values are reviewed for reasonableness with consideration given to historical performance of pavements of similar construction, age and use.

Airfield Pavement Summary

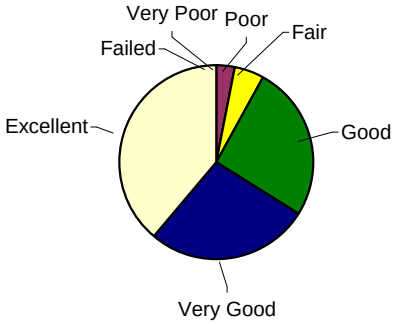
Naval Station Keflavik, Iceland
2001 PCI Inspection

Age Category (Years)	Average Age At Inspection	Total Area (SF)	Number of Sections	Arithmetic Average PCI	PCI Standard Deviation	Weighted Average PCI
0-02	1.00	793,000.00	4	100.00	0.00	100.00
03-05	3.75	1,702,478.01	8	87.38	9.80	79.42
06-10	7.83	5,743,064.03	29	84.52	12.51	82.66
11-15	13.32	4,152,939.02	19	87.37	14.28	87.02
16-20	17.20	1,542,528.00	35	84.86	11.27	82.33
21-25	21.33	76,792.00	3	66.00	9.90	61.50
over 40	47.24	5,796,943.07	38	65.87	18.11	62.15
All	21.88	19,807,744.14	136	80.01	16.94	77.88

PCI Frequency Report

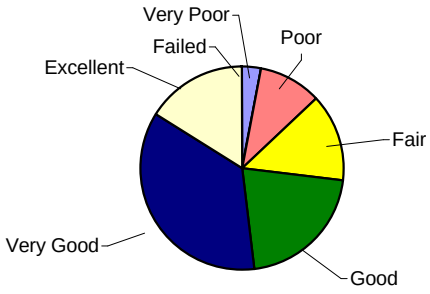
Airfield Condition Naval Station Keflavik, Iceland
July 2001

Condition	PCI Range	# of Sects.	Total Area (SF)	% Area
Failed	0-10	1	68,692	0
Very Poor	11-25	1	530,005	3
Poor	26-40	1	44,622	0
Fair	41-55	9	942,734	5
Good	56-70	22	5,128,010	26
Very Good	71-85	49	5,285,869	27
Excellent	86-100	53	7,807,812	39



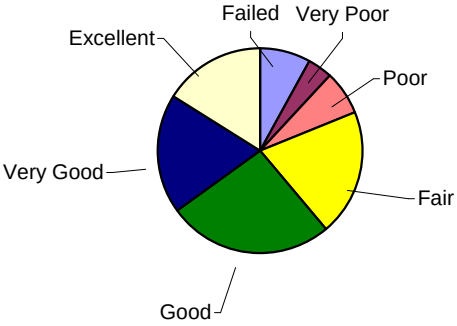
Airfield Condition Naval Station Keflavik, Iceland
Predicted July 2006

Condition	PCI Range	# of Sects.	Total Area (SF)	% Area
Failed	0-10	2	598,697	3
Very Poor	11-25	0	0	0
Poor	26-40	10	1,978,999	10
Fair	41-55	11	2,737,788	14
Good	56-70	25	4,168,427	21
Very Good	71-85	60	7,085,526	36
Excellent	86-100	28	3,238,307	16



Airfield Condition Naval Station Keflavik, Iceland
Predicted July 201

Condition	PCI Range	# of Sects.	Total Area (SF)	% Area
Failed	0-10	5	1,503,998	8
Very Poor	11-25	5	762,604	4
Poor	26-40	8	1,406,181	7
Fair	41-55	17	4,031,531	20
Good	56-70	43	5,093,523	26
Very Good	71-85	32	3,790,650	19
Excellent	86-100	26	3,219,257	16



Basis of Cost Estimates

The costs shown in the Engineering Summary of this report were derived from the costs shown in the following sheets multiplied by a 10% contingency factor, 10% fuel escalation factor and a 3.0% annual escalation factor. Unit costs used in estimating were derived using historical data shown below from recent Keflavik airfield construction projects of regional significance. **Project costs reflect estimated construction costs for the repairs only, and do not reflect mobilization or incidental work (temporary airfield traffic control markings or lighting, on-site supervision facilities, quality control, etc.)**. When the required maintenance involves basically the same type of work, combining relatively small size projects under the same construction contract can result in cost savings due to "economy of scale". Note that the unit costs were based upon average size construction projects (projects of total cost exceeding $250,000). If pavement features are maintained via contracts of work not exceeding $250,000 total value, costs for the work are expected to be slightly higher than shown on the following sheets.

CODE	DESCRIPTION	WORK UNIT	UNIT COST **(2002)**
CS-AC	Crack Sealing - AC	ft.	4.50
CS-PC	Crack Sealing - PCC	ft.	6.75
JS-PC	Joint Sealant Replacement	ft.	9.30
ML-AC	Milling - Localized AC	sq. ft.	1.55
OL-1B	Overlay - 1.5" AC	sq. ft.	2.25
OL-2A	Overlay - 2.5" AC	sq. ft.	2.80
OL-A1	Overlay - 1.0" AC	sq. ft.	2.25
OL-A2	Overlay - 2.0" AC	sq. ft.	2.55
OL-A3	Overlay - 3.0" AC	sq. ft.	6.05
OL-A4	Overlay - 4.0" AC	sq. ft.	7.60
PA-AC	Patching - AC Mill/Replace Surface	sq. ft.	8.30
PA-PC	Patch PCC Spall - AC	sq. ft.	2.55
PA-PF	Patching - PCC Full Depth	sq. ft.	52.80
PA-PP	Patching - PCC Partial Depth	sq. ft.	90.35
PA-RP	Patch/Repair - Reconstruction	sq. ft.	40.00
RP-SL	Localized Slab Replacement	sq. ft.	67.85
SR-PC	Surface Reconstruction - PCC	sq. ft.	52.80
SS-FS	Surface Seal - Fog Seal	sq. ft.	1.25
ST-SB	Surface Treatment - Single Bituminous	sq. ft.	0.45

Table 4. Repair Costs for Repairs Recommended in the Network Maintenance Report.

Naval Station Keflavik - Maintenance and Repair Report

Branch	Section	Distress Type and Severity		Distress Quantity	% Distress	Policy Action	Work Quantity	Unit Cost	Total Defect Cost
AAE	1	41 ALLIGATOR CR	M	641 SF	0.67	Patching - AC Deep	746.95 SF	$3.80	$2,838.41
AAE	1	41 ALLIGATOR CR	H	2,564 SF	2.66	Patching - AC Deep	2,771.99 SF	$3.80	$10,533.57
AAE	1	48 L & T CR	L	734 LF	0.76	No Policy Action	0.00	$0.00	$0.00
AAE	1	48 L & T CR	M	606 LF	0.63	Crack Sealing - AC	605.98 LF	$4.30	$2,605.71
AAE	1	48 L & T CR	H	305 LF	0.32	Crack Sealing - AC	304.59 LF	$4.30	$1,309.75
AAE	1	52 WEATH/RAVEL	L	776 SF	0.81	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$17,287.43**
		Recommended Maintenance Projects:			**FY05**	**Overlay with 2"AC**	**Recommendation Cost**		**$125,000.00**
AAE	2	65 JT SEAL DMG	M	96 SLABS	100.00	Joint Seal - Silicon	2,473.16 LF	$9.30	$23,000.43
AAE	2	74 JOINT SPALL	L	1 SLABS	2.17	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$23,000.43**
		Recommended Maintenance Projects:				**None**	**Recommendation Cost**		**$0.00**
AHA	1	62 CORNER BREAK	M	4 SLABS	1.11	Patching - PCC Full Depth	122.35 SF	$49.30	$6,031.84
AHA	1	63 LINEAR CR	L	6 SLABS	1.67	No Policy Action	0.00	$0.00	$0.00
AHA	1	63 LINEAR CR	M	21 SLABS	6.11	Crack Sealing - PCC	416.80 LF	$6.75	$2,813.39
AHA	1	63 LINEAR CR	H	2 SLABS	1.00	Crack Sealing - PCC	37.89 LF	$6.75	$255.76
AHA	1	65 JT SEAL DMG	M	152 SLABS	44.44	Joint Seal - Silicon	337.79 LF	$9.30	$3,141.49
AHA	1	65 JT SEAL DMG	H	189 SLABS	55.56	Joint Seal - Silicon	422.24 LF	$9.30	$3,926.86
AHA	1	66 SMALL PATCH	L	102 SLABS	30.00	No Policy Action	0.00	$0.00	$0.00
AHA	1	66 SMALL PATCH	M	4 SLABS	1.11	Patching - PCC Partial Depth	10.20 SF	$84.50	$861.55
AHA	1	67 LARGE PATCH	L	34 SLABS	10.00	No Policy Action	0.00	$0.00	$0.00
AHA	1	67 LARGE PATCH	M	9 SLABS	2.78	Patching - PCC Full Depth	932.30 SF	$49.30	$45,962.61
AHA	1	67 LARGE PATCH	H	4 SLABS	1.11	Patching - PCC Full Depth	372.92 SF	$49.30	$18,385.05
AHA	1	70 SCALING	L	8 SLABS	2.22	No Policy Action	0.00	$0.00	$0.00
AHA	1	72 SHAT. SLAB	M	2 SLABS	1.00	Slab Replacement - PCC	84.20 SY	$605.00	$50,939.93
AHA	1	74 JOINT SPALL	L	66 SLABS	19.44	No Policy Action	0.00	$0.00	$0.00
AHA	1	74 JOINT SPALL	M	6 SLABS	1.67	Patching - PCC Partial Depth	186.46 SF	$84.50	$15,755.94
AHA	1	74 JOINT SPALL	H	13 SLABS	3.89	Patching - PCC Partial Depth	435.08 SF	$84.50	$36,763.87
AHA	1	75 CORNER SPALL	L	21 SLABS	6.11	No Policy Action	0.00	$0.00	$0.00
AHA	1	75 CORNER SPALL	M	9 SLABS	2.78	Patching - PCC Partial Depth	25.49 SF	$84.50	$2,153.86
AHA	1	75 CORNER SPALL	H	4 SLABS	1.11	Patching - PCC Partial Depth	10.20 SF	$84.50	$861.55
					FY02		**Total Section Costs**		**$187,853.71**
		Recommended Maintenance Projects:			**FY07**	**Joint Sealant/PCC Repairs**	**Recommendation Cost**		**$425,000.00**
AHA	2	41 ALLIGATOR CR	M	0 SF	0.44	Patching - AC Deep	4.00 SF	$3.80	$15.20
AHA	2	43 BLOCK CR	L	0 SF	5.99	No Policy Action	0.00	$0.00	$0.00
AHA	2	43 BLOCK CR	M	0 SF	9.99	Patching - AC Shallow	0.00 SF	$2.53	$0.00
AHA	2	48 L & T CR	L	0 LF	0.10	No Policy Action	0.00	$0.00	$0.00
AHA	2	50 PATCHING	L	0 SF	24.07	No Policy Action	0.00	$0.00	$0.00
AHA	2	50 PATCHING	M	0 SF	3.92	Patching - AC Deep	4.00 SF	$3.80	$15.20
AHA	2	52 WEATH/RAVEL	L	0 SF	0.14	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$30.40**
		Recommended Maintenance Projects:			**FY07**	**Mill and Resurface 2" AC**	**Recommendation Cost**		**$100,000.00**
CTA	1	63 LINEAR CR	M	3 SLABS	1.00	Crack Sealing - PCC	76.25 LF	$6.75	$514.71
CTA	1	65 JT SEAL DMG	H	915 SLABS	100.00	Joint Seal - Silicon	44,214.46 LF	$9.30	$411,194.53
					FY02		**Total Section Costs**		**$411,709.25**
		Recommended Maintenance Projects:			**FY02**	**Widen Joints/Sealant**	**Recommendation Cost**		**$500,000.00**

Naval Station Keflavik - Maintenance and Repair Report

Branch	Section	Distress Type and Severity		Distress Quantity	% Distress	Policy Action	Work Quantity	Unit Cost	Total Defect Cost
CTA	1A	49 OIL SPILLAGE	L	0 SF	0.10	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$0.00**
		Recommended Maintenance Projects:			**FYXX**		**Recommendation Cost**		**$0.00**
CTA	1B	48 L & T CR	L	3,242 LF	2.12	No Policy Action	0.00	$0.00	$0.00
CTA	1B	49 OIL SPILLAGE	L	170 SF	0.12	No Policy Action	0.00	$0.00	$0.00
CTA	1B	50 PATCHING	L	6,721 SF	4.35	No Policy Action	0.00	$0.00	$0.00
CTA	1B	51 POLISHED AG	L	1,924 SF	1.33	No Policy Action	0.00	$0.00	$0.00
CTA	1B	52 WEATH/RAVEL	L	1,197 SF	0.82	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$0.00**
		Recommended Maintenance Projects:			**FY03**	**Resurface with 2.5"AC**	**Recommendation Cost**		**$400,000.00**
CTA	1C	41 ALLIGATOR CR	L	1,293.78 SF	0.46	No Policy Action	0.00	$0.00	$0.00
CTA	1C	48 L & T CR	L	11,720.99 LF	3.88	No Policy Action	0.00	$0.00	$0.00
CTA	1C	48 L & T CR	M	946.33 LF	0.33	Crack Sealing - AC	946.37 LF	$4.30	$4,069.41
CTA	1C	48 L & T CR	H	177.94 LF	0.10	Crack Sealing - AC	177.95 LF	$4.30	$765.19
CTA	1C	49 OIL SPILLAGE	L	160.00 SF	0.10	No Policy Action	0.00	$0.00	$0.00
CTA	1C	50 PATCHING	L	99,047.82 SF	32.90	No Policy Action	0.00	$0.00	$0.00
CTA	1C	52 WEATH/RAVEL	L	4,386.53 SF	1.48	No Policy Action	0.00	$0.00	$0.00
CTA	1C	52 WEATH/RAVEL	M	41.00 SF	0.10	Patching - AC Shallow	41.00 SF	$2.53	$103.73
CTA	1C	52 WEATH/RAVEL	H	161.72 SF	0.10	Patching - AC Shallow	161.72 SF	$2.53	$409.16
					FY02		**Total Section Costs**		**$5,347.49**
		Recommended Maintenance Projects:			**FY03**	**Resurface with 2.5"AC**	**Recommendation Cost**		**$400,000.00**
CTA	2	63 LINEAR CR	L	3 SLABS	1.00	No Policy Action	0.00	$0.00	$0.00
CTA	2	65 JT SEAL DMG	L	103 SLABS	20.00	No Policy Action	0.00	$0.00	$0.00
CTA	2	65 JT SEAL DMG	M	360 SLABS	70.00	Joint Seal - Silicon	17,570.86 LF	$9.30	$163,408.97
CTA	2	65 JT SEAL DMG	H	51 SLABS	10.00	Joint Seal - Silicon	2,510.12 LF	$9.30	$23,344.14
CTA	2	66 SMALL PATCH	M	3 SLABS	1.00	Patching - PCC Partial Depth	6.92 SF	$84.50	$584.39
CTA	2	74 JOINT SPALL	L	33 SLABS	6.50	No Policy Action	0.00	$0.00	$0.00
CTA	2	74 JOINT SPALL	M	10 SLABS	2.00	Patching - PCC Partial Depth	421.59 SF	$84.50	$35,624.14
CTA	2	74 JOINT SPALL	H	3 SLABS	1.00	Patching - PCC Partial Depth	105.40 SF	$84.50	$8,906.04
CTA	2	75 CORNER SPALL	L	28 SLABS	5.50	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$231,867.68**
CTA	3	65 JT SEAL DMG	H	66 SLABS	100.00	Joint Seal - Silicon	3,364.62 LF	$9.30	$31,290.95
					FY02		**Total Section Costs**		**$31,290.95**
		Recommended Maintenance Projects:			**FY02**	**Widen Joints/Sealant**	**Recommendation Cost**		**$150,000.00**
DA	1	65 JT SEAL DMG	L	104 SLABS	100.00	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$0.00**
		Recommended Maintenance Projects:				**None**	**Recommendation Cost**		**$0.00**
DA	2	48 L & T CR	L	48 LF	0.40	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$0.00**
		Recommended Maintenance Projects:				**None**	**Recommendation Cost**		**$0.00**

Naval Station Keflavik - Maintenance and Repair Report

Branch	Section	Distress Type and Severity	Distress Quantity	% Distress	Policy Action	Work Quantity	Unit Cost	Total Defect Cost
DHS1	1	62 CORNER BREAK L	1 SLABS	2.78	No Policy Action	0.00	$0.00	$0.00
DHS1	1	63 LINEAR CR L	1 SLABS	2.78	No Policy Action	0.00	$0.00	$0.00
DHS1	1	63 LINEAR CR M	1 SLABS	2.78	Crack Sealing - PCC	15.83 LF	$6.75	$106.88
DHS1	1	65 JT SEAL DMG M	38 SLABS	100.00	Joint Seal - Silicon	955.05 LF	$9.30	$8,881.93
DHS1	1	71 FAULTING L	4 SLABS	11.11	No Policy Action	0.00	$0.00	$0.00
DHS1	1	72 SHAT. SLAB L	1 SLABS	2.78	No Policy Action	0.00	$0.00	$0.00
				FY02		**Total Section Costs**		**$8,988.81**
		Recommended Maintenance Projects:			**None**	**Recommendation Cost**		**$0.00**
DHS2	1	65 JT SEAL DMG M	36 SLABS	100.00	Joint Seal - Silicon	1,393.07 LF	$9.30	$12,955.53
DHS2	1	75 CORNER SPALL L	1 SLABS	2.78	No Policy Action	0.00	$0.00	$0.00
				FY02		**Total Section Costs**		**$12,955.53**
		Recommended Maintenance Projects:			**None**	**Recommendation Cost**		**$0.00**
DHS3	1	65 JT SEAL DMG M	36 SLABS	100.00	Joint Seal - Silicon	1,393.07 LF	$9.30	$12,955.53
DHS3	1	71 FAULTING L	1 SLABS	2.78	No Policy Action	0.00	$0.00	$0.00
DHS3	1	75 CORNER SPALL L	1 SLABS	2.78	No Policy Action	0.00	$0.00	$0.00
				FY02		**Total Section Costs**		**$12,955.53**
		Recommended Maintenance Projects:			**None**	**Recommendation Cost**		**$0.00**
DHS3	2	48 L & T CR L	0 LF	0.10	No Policy Action	0.00	$0.00	$0.00
				FY02		**Total Section Costs**		**$0.00**
		Recommended Maintenance Projects:			**None**	**Recommendation Cost**		**$0.00**
DHS4	1	65 JT SEAL DMG M	36 SLABS	100.00	Joint Seal - Silicon	1,393.07 LF	$9.30	$12,955.53
				FY02		**Total Section Costs**		**$12,955.53**
		Recommended Maintenance Projects:			**None**	**Recommendation Cost**		**$0.00**
DHS4	2	48 L & T CR L	0 LF	0.10	No Policy Action	0.00	$0.00	$0.00
				FY02		**Total Section Costs**		**$0.00**
		Recommended Maintenance Projects:			**None**	**Recommendation Cost**		**$0.00**
DHS5	1	62 CORNER BREAK L	1 SLABS	2.78	No Policy Action	0.00	$0.00	$0.00
DHS5	1	63 LINEAR CR L	12 SLABS	33.33	No Policy Action	0.00	$0.00	$0.00
DHS5	1	65 JT SEAL DMG M	36 SLABS	100.00	Joint Seal - Silicon	1,393.07 LF	$9.30	$12,955.53
DHS5	1	72 SHAT. SLAB L	2 SLABS	5.56	No Policy Action	0.00	$0.00	$0.00
DHS5	1	74 JOINT SPALL L	1 SLABS	2.78	No Policy Action	0.00	$0.00	$0.00
DHS5	1	75 CORNER SPALL L	2 SLABS	5.56	No Policy Action	0.00	$0.00	$0.00
				FY02		**Total Section Costs**		**$12,955.53**
		Recommended Maintenance Projects:			**None**	**Recommendation Cost**		**$0.00**
DHS6	1	65 JT SEAL DMG M	36 SLABS	100.00	Joint Seal - Silicon	1,393.07 LF	$9.30	$12,955.53
DHS6	1	74 JOINT SPALL L	1 SLABS	2.78	No Policy Action	0.00	$0.00	$0.00
				FY02		**Total Section Costs**		**$12,955.53**
		Recommended Maintenance Projects:			**None**	**Recommendation Cost**		**$0.00**

Naval Station Keflavik - Maintenance and Repair Report

Branch	Section	Distress Type and Severity	Distress Quantity	% Distress	Policy Action	Work Quantity	Unit Cost	Total Defect Cost
DHS7	1	62 CORNER BREAK L	3 SLABS	8.33	No Policy Action	0.00	$0.00	$0.00
DHS7	1	63 LINEAR CR L	5 SLABS	13.89	No Policy Action	0.00	$0.00	$0.00
DHS7	1	65 JT SEAL DMG L	36 SLABS	100.00	No Policy Action	0.00	$0.00	$0.00
DHS7	1	74 JOINT SPALL L	4 SLABS	11.11	No Policy Action	0.00	$0.00	$0.00
DHS7	2	48 L & T CR L	0 LF	0.10	No Policy Action	0.00	$0.00	$0.00
				FY02		**Total Section Costs**		$0.00
		Recommended Maintenance Projects:			**None**	**Recommendation Cost**		**$0.00**
DHS8	1	63 LINEAR CR L	1 SLABS	2.78	No Policy Action	0.00	$0.00	$0.00
DHS8	1	65 JT SEAL DMG L	36 SLABS	100.00	No Policy Action	0.00	$0.00	$0.00
				FY02		**Total Section Costs**		$0.00
		Recommended Maintenance Projects:			**None**	**Recommendation Cost**		**$0.00**
DHS8	2	48 L & T CR L	0 LF	0.10	No Policy Action	0.00	$0.00	$0.00
DHS8	2	50 PATCHING L	0 SF	8.31	No Policy Action	0.00	$0.00	$0.00
DHS8	2	52 WEATH/RAVEL L	0 SF	0.10	No Policy Action	0.00	$0.00	$0.00
				FY02		**Total Section Costs**		**$0.00**
		Recommended Maintenance Projects:			**None**	**Recommendation Cost**		**$0.00**
DHS9	1	62 CORNER BREAK L	2 SLABS	5.56	No Policy Action	0.00	$0.00	$0.00
DHS9	1	63 LINEAR CR L	7 SLABS	19.44	No Policy Action	0.00	$0.00	$0.00
DHS9	1	65 JT SEAL DMG M	36 SLABS	100.00	Joint Seal - Silicon	1,393.07 LF	$9.30	$12,955.53
DHS9	1	74 JOINT SPALL L	5 SLABS	13.89	No Policy Action	0.00	$0.00	$0.00
DHS9	1	75 CORNER SPALL L	3 SLABS	8.33	No Policy Action	0.00	$0.00	$0.00
				FY02		**Total Section Costs**		**$12,955.53**
		Recommended Maintenance Projects:			**None**	**Recommendation Cost**		**$0.00**
DHS9	2	48 L & T CR L	0 LF	0.10	No Policy Action	0.00	$0.00	$0.00
				FY02		**Total Section Costs**		$0.00
		Recommended Maintenance Projects:			**None**	**Recommendation Cost**		**$0.00**
HA11	1	45 DEPRESSION M	420 SF	0.33	Patching - AC Deep	506.00 SF	$3.80	$1,922.80
HA11	1	46 JET BLAST L	503 SF	0.40	No Policy Action	0.00	$0.00	$0.00
HA11	1	50 PATCHING L	9,541 SF	7.57	No Policy Action	0.00	$0.00	$0.00
HA11	1	52 WEATH/RAVEL L	116,830 SF	92.72	No Policy Action	0.00	$0.00	$0.00
				FY02		**Total Section Costs**		**$1,922.80**
		Recommended Maintenance Projects:		**FY08**	**Overlay with 2" AC**	**Recommendation Cost**		**$175,000.00**
HA20	1	43 BLOCK CR L	204 SF	0.17	No Policy Action	0.00	$0.00	$0.00
HA20	1	48 L & T CR L	2,244 LF	1.83	No Policy Action	0.00	$0.00	$0.00
HA20	1	48 L & T CR M	4,056 LF	3.31	Crack Sealing - AC	4,055.84 LF	$4.30	$17,440.10
HA20	1	52 WEATH/RAVEL L	294 SF	0.24	No Policy Action	0.00	$0.00	$0.00
				FY02		**Total Section Costs**		**$17,440.10**
		Recommended Maintenance Projects:			**None**	**Recommendation Cost**		**$0.00**

Naval Station Keflavik - Maintenance and Repair Report

Branch	Section	Distress Type and Severity		Distress Quantity	% Distress	Policy Action	Work Quantity	Unit Cost	Total Defect Cost
HA25	1	41 ALLIGATOR CR	L	105 SF	0.10	No Policy Action	0.00	$0.00	$0.00
HA25	1	45 DEPRESSION	L	80 SF	0.10	No Policy Action	0.00	$0.00	$0.00
HA25	1	48 L & T CR	L	764 LF	0.63	No Policy Action	0.00	$0.00	$0.00
HA25	1	48 L & T CR	M	1,018 LF	0.84	Crack Sealing - AC	1,017.57 LF	$4.30	$4,375.57
HA25	1	48 L & T CR	H	1,388 LF	1.15	Crack Sealing - AC	1,387.60 LF	$4.30	$5,966.68
HA25	1	49 OIL SPILLAGE	L	32 SF	0.10	No Policy Action	0.00	$0.00	$0.00
HA25	1	50 PATCHING	L	3,607 SF	2.99	No Policy Action	0.00	$0.00	$0.00
HA25	1	52 WEATH/RAVEL	L	30,799 SF	25.51	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$10,342.25**
		Recommended Maintenance Projects:			**FY08**	**Resurface with 2" AC**	**Recommendation Cost**		**$225,000.00**
HA29	1	45 DEPRESSION	L	4,674 SF	3.78	No Policy Action	0.00	$0.00	$0.00
HA29	1	46 JET BLAST	L	62 SF	0.10	No Policy Action	0.00	$0.00	$0.00
HA29	1	48 L & T CR	L	366 LF	0.30	No Policy Action	0.00	$0.00	$0.00
HA29	1	52 WEATH/RAVEL	L	123,317 SF	99.81	No Policy Action	0.00	$0.00	$0.00
HA29	1	52 WEATH/RAVEL	M	103 SF	0.10	Patching - AC Shallow	102.85 SF	$2.53	$260.21
					FY02		**Total Section Costs**		**$260.21**
		Recommended Maintenance Projects:			**FY08**	**Resurface with 2" AC**	**Recommendation Cost**		**$225,000.00**
HCA	1	62 CORNER BREAK	L	10 SLABS	1.00	No Policy Action	0.00	$0.00	$0.00
HCA	1	63 LINEAR CR	L	41 SLABS	2.60	No Policy Action	0.00	$0.00	$0.00
HCA	1	63 LINEAR CR	M	6 SLABS	1.00	Crack Sealing - PCC	159.51 LF	$6.75	$1,076.68
HCA	1	65 JT SEAL DMG	L	766 SLABS	48.00	No Policy Action	0.00	$0.00	$0.00
HCA	1	65 JT SEAL DMG	M	829 SLABS	52.00	Joint Seal - Silicon	39,677.94 LF	$9.30	$369,004.81
HCA	1	66 SMALL PATCH	L	61 SLABS	3.80	No Policy Action	0.00	$0.00	$0.00
HCA	1	66 SMALL PATCH	M	3 SLABS	1.00	Patching - PCC Partial Depth	8.58 SF	$84.50	$725.37
HCA	1	67 LARGE PATCH	L	35 SLABS	2.20	No Policy Action	0.00	$0.00	$0.00
HCA	1	67 LARGE PATCH	M	13 SLABS	1.00	Patching - PCC Full Depth	1,569.88 SF	$49.30	$77,395.11
HCA	1	67 LARGE PATCH	H	3 SLABS	1.00	Patching - PCC Full Depth	392.47 SF	$49.30	$19,348.78
HCA	1	74 JOINT SPALL	L	64 SLABS	4.00	No Policy Action	0.00	$0.00	$0.00
HCA	1	74 JOINT SPALL	M	35 SLABS	2.20	Patching - PCC Partial Depth	1,439.06 SF	$84.50	$121,600.31
HCA	1	75 CORNER SPALL	L	67 SLABS	4.20	No Policy Action	0.00	$0.00	$0.00
HCA	1	75 CORNER SPALL	M	6 SLABS	1.00	Patching - PCC Partial Depth	17.17 SF	$84.50	$1,450.73
HCA	1	75 CORNER SPALL	H	3 SLABS	1.00	Patching - PCC Partial Depth	8.58 SF	$84.50	$725.37
					FY02		**Total Section Costs**		**$591,327.15**
		Recommended Maintenance Projects:			**FY03**	**Joint Sealant/PCC Repairs**	**Recommendation Cost**		**$1,000,000.00**
HCA	2	41 ALLIGATOR CR	L	900 SF	1.04	No Policy Action	0.00	$0.00	$0.00
HCA	2	41 ALLIGATOR CR	M	488 SF	0.56	Patching - AC Deep	580.63 SF	$3.80	$2,206.38
HCA	2	48 L & T CR	L	3,285 LF	3.79	No Policy Action	0.00	$0.00	$0.00
HCA	2	48 L & T CR	M	1,539 LF	1.77	Crack Sealing - AC	1,539.56 LF	$4.30	$6,620.12
HCA	2	48 L & T CR	H	3,140 LF	3.62	Crack Sealing - AC	3,139.84 LF	$4.30	$13,501.32
HCA	2	50 PATCHING	L	5,072 SF	5.84	No Policy Action	0.00	$0.00	$0.00
HCA	2	50 PATCHING	M	1,108 SF	1.28	Patching - AC Deep	1,245.66 SF	$3.80	$4,733.51
HCA	2	50 PATCHING	H	408 SF	0.47	Patching - AC Deep	492.78 SF	$3.80	$1,872.58
HCA	2	52 WEATH/RAVEL	L	68,066 SF	78.42	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$28,933.90**
		Recommended Maintenance Projects:			**FY06**	**Resurface with 2" AC**	**Recommendation Cost**		**$135,000.00**

Naval Station Keflavik - Maintenance and Repair Report

Branch	Section	Distress Type and Severity		Distress Quantity	% Distress	Policy Action	Work Quantity	Unit Cost	Total Defect Cost
KA	1	41 ALLIGATOR CR	L	12,287 SF	2.86	No Policy Action	0.00	$0.00	$0.00
KA	1	41 ALLIGATOR CR	H	17 SF	0.10	Patching - AC Deep	37.87 SF	$3.80	$143.90
KA	1	43 BLOCK CR	L	6,693 SF	1.56	No Policy Action	0.00	$0.00	$0.00
KA	1	45 DEPRESSION	L	507 SF	0.12	No Policy Action	0.00	$0.00	$0.00
KA	1	45 DEPRESSION	M	34 SF	0.10	Patching - AC Deep	61.97 SF	$3.80	$235.47
KA	1	48 L & T CR	L	6,944 LF	1.62	No Policy Action	0.00	$0.00	$0.00
KA	1	49 OIL SPILLAGE	L	1,615 SF	0.38	No Policy Action	0.00	$0.00	$0.00
KA	1	50 PATCHING	L	5,731 SF	1.33	No Policy Action	0.00	$0.00	$0.00
KA	1	52 WEATH/RAVEL	L	34,575 SF	8.04	No Policy Action	0.00	$0.00	$0.00
KA	1	52 WEATH/RAVEL	M	1,942 SF	0.45	Patching - AC Shallow	1,941.85 SF	$2.53	$4,912.90
KA	1	54 SHOVING	L	1,203 SF	0.28	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$5,292.27**
		Recommended Maintenance Projects:			**FY05**	**Resurface with 2"AC**	**Recommendation Cost**		**$1,000,000.00**
KA	1A	52 WEATH/RAVEL	L	538 SF	0.84	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$0.00**
		Recommended Maintenance Projects:				**None**	**Recommendation Cost**		**$0.00**
KA	2	41 ALLIGATOR CR	L	386 SF	0.10	No Policy Action	0.00	$0.00	$0.00
KA	2	41 ALLIGATOR CR	M	8,591 SF	1.11	Patching - AC Deep	8,968.03 SF	$3.80	$34,078.49
KA	2	45 DEPRESSION	H	77 SF	0.10	Patching - AC Deep	116.59 SF	$3.80	$443.05
KA	2	46 JET BLAST	L	48 SF	0.10	No Policy Action	0.00	$0.00	$0.00
KA	2	48 L & T CR	L	5,330 LF	0.69	No Policy Action	0.00	$0.00	$0.00
KA	2	48 L & T CR	M	5,253 LF	0.68	Crack Sealing - AC	5,252.76 LF	$4.30	$22,586.86
KA	2	48 L & T CR	H	1,110 LF	0.14	Crack Sealing - AC	1,110.42 LF	$4.30	$4,774.80
KA	2	50 PATCHING	L	8,581 SF	1.11	No Policy Action	0.00	$0.00	$0.00
KA	2	50 PATCHING	M	8,301 SF	1.07	Patching - AC Deep	8,672.10 SF	$3.80	$32,953.98
KA	2	52 WEATH/RAVEL	L	8,408 SF	1.09	No Policy Action	0.00	$0.00	$0.00
KA	2	52 WEATH/RAVEL	M	42,086 SF	5.44	Patching - AC Shallow	42,086.09 SF	$2.53	$106,477.95
KA	2	52 WEATH/RAVEL	H	68 SF	0.10	Patching - AC Shallow	67.57 SF	$2.53	$170.95
KA	2	53 RUTTING	H	116 SF	0.10	Patching - AC Deep	115.83 SF	$3.80	$440.17
KA	2	55 SLIPPAGE CR	L	386 SF	0.10	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$201,926.24**
		Recommended Maintenance Projects:			**FY05**	**Resurface with 2" AC**	**Recommendation Cost**		**$1,300,000.00**
KAT	1	62 CORNER BREAK	L	1 SLABS	1.25	No Policy Action	0.00	$0.00	$0.00
KAT	1	63 LINEAR CR	L	4 SLABS	3.75	No Policy Action	0.00	$0.00	$0.00
KAT	1	63 LINEAR CR	M	3 SLABS	2.50	Crack Sealing - PCC	83.25 LF	$6.75	$561.97
KAT	1	65 JT SEAL DMG	H	111 SLABS	100.00	Joint Seal - Silicon	5,451.27 LF	$9.30	$50,696.77
KAT	1	66 SMALL PATCH	L	57 SLABS	51.25	No Policy Action	0.00	$0.00	$0.00
KAT	1	66 SMALL PATCH	M	6 SLABS	5.00	Patching - PCC Partial Depth	14.93 SF	$84.50	$1,262.00
KAT	1	66 SMALL PATCH	H	3 SLABS	2.50	Patching - PCC Partial Depth	7.47 SF	$84.50	$631.00
KAT	1	67 LARGE PATCH	L	10 SLABS	8.75	No Policy Action	0.00	$0.00	$0.00
KAT	1	74 JOINT SPALL	L	15 SLABS	13.75	No Policy Action	0.00	$0.00	$0.00
KAT	1	74 JOINT SPALL	M	4 SLABS	3.75	Patching - PCC Partial Depth	136.56 SF	$84.50	$11,539.73
KAT	1	74 JOINT SPALL	H	4 SLABS	3.75	Patching - PCC Partial Depth	136.56 SF	$84.50	$11,539.73
KAT	1	75 CORNER SPALL	L	7 SLABS	6.25	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$76,231.19**
		Recommended Maintenance Projects:			**FY05**	**Joint Sealant/PCC Repairs**	**Recommendation Cost**		**$125,000.00**

Naval Station Keflavik - Maintenance and Repair Report

Branch	Section	Distress Type and Severity		Distress Quantity	% Distress	Policy Action	Work Quantity	Unit Cost	Total Defect Cost
KAT	2	41 ALLIGATOR CR	L	1,629 SF	0.79	No Policy Action	0.00	$0.00	$0.00
KAT	2	48 L & T CR	L	645 LF	0.31	No Policy Action	0.00	$0.00	$0.00
KAT	2	48 L & T CR	M	124 LF	0.10	Crack Sealing - AC	124.09 LF	$4.30	$533.60
KAT	2	49 OIL SPILLAGE	L	149 SF	0.10	No Policy Action	0.00	$0.00	$0.00
KAT	2	52 WEATH/RAVEL	L	583 SF	0.28	No Policy Action	0.00	$0.00	$0.00
KAT	2	52 WEATH/RAVEL	M	41 SF	0.10	Patching - AC Shallow	41.35 SF	$2.53	$104.62
					FY02		**Total Section Costs**		**$638.22**
		Recommended Maintenance Projects:				**None**	**Recommendation Cost**		**$0.00**
KHS1	1	63 LINEAR CR	L	7 SLABS	7.14	No Policy Action	0.00	$0.00	$0.00
KHS1	1	65 JT SEAL DMG	M	98 SLABS	100.00	Joint Seal - Silicon	3,500.17 LF	$9.30	$32,551.59
KHS1	1	66 SMALL PATCH	L	6 SLABS	6.12	No Policy Action	0.00	$0.00	$0.00
KHS1	1	66 SMALL PATCH	M	2 SLABS	2.04	Patching - PCC Partial Depth	5.38 SF	$84.50	$454.77
KHS1	1	67 LARGE PATCH	L	1 SLABS	1.02	No Policy Action	0.00	$0.00	$0.00
KHS1	1	67 LARGE PATCH	M	1 SLABS	1.02	Patching - PCC Full Depth	98.43 SF	$49.30	$4,852.36
KHS1	1	70 SCALING	L	2 SLABS	2.04	No Policy Action	0.00	$0.00	$0.00
KHS1	1	74 JOINT SPALL	L	4 SLABS	4.08	No Policy Action	0.00	$0.00	$0.00
KHS1	1	74 JOINT SPALL	M	2 SLABS	2.04	Patching - PCC Partial Depth	65.62 SF	$84.50	$5,544.61
KHS1	1	75 CORNER SPALL	L	2 SLABS	2.04	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$43,403.34**
		Recommended Maintenance Projects:			**FY09**	**Joint Sealant/PCC Repairs**	**Recommendation Cost**		**$50,000.00**
KHS1	2	43 BLOCK CR	L	147 SF	1.23	No Policy Action	0.00	$0.00	$0.00
KHS1	2	48 L & T CR	L	86 LF	0.72	No Policy Action	0.00	$0.00	$0.00
KHS1	2	48 L & T CR	M	78 LF	0.65	Crack Sealing - AC	78.12 LF	$4.30	$335.90
KHS1	2	52 WEATH/RAVEL	L	5 SF	0.10	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$335.90**
		Recommended Maintenance Projects:				**None**	**Recommendation Cost**		**$0.00**
KHS2	1	62 CORNER BREAK	L	1 SLABS	1.02	No Policy Action	0.00	$0.00	$0.00
KHS2	1	63 LINEAR CR	L	4 SLABS	4.08	No Policy Action	0.00	$0.00	$0.00
KHS2	1	63 LINEAR CR	M	1 SLABS	1.02	Crack Sealing - PCC	20.00 LF	$6.75	$135.01
KHS2	1	63 LINEAR CR	H	2 SLABS	2.04	Crack Sealing - PCC	40.00 LF	$6.75	$270.01
KHS2	1	65 JT SEAL DMG	M	98 SLABS	100.00	Joint Seal - Silicon	3,500.17 LF	$9.30	$32,551.59
KHS2	1	66 SMALL PATCH	L	17 SLABS	17.35	No Policy Action	0.00	$0.00	$0.00
KHS2	1	66 SMALL PATCH	M	1 SLABS	1.02	Patching - PCC Partial Depth	2.69 SF	$84.50	$227.39
KHS2	1	66 SMALL PATCH	H	1 SLABS	1.02	Patching - PCC Partial Depth	2.69 SF	$84.50	$227.39
KHS2	1	67 LARGE PATCH	L	1 SLABS	1.02	No Policy Action	0.00	$0.00	$0.00
KHS2	1	67 LARGE PATCH	H	2 SLABS	2.04	Patching - PCC Full Depth	196.85 SF	$49.30	$9,704.72
KHS2	1	70 SCALING	L	3 SLABS	3.06	No Policy Action	0.00	$0.00	$0.00
KHS2	1	70 SCALING	M	1 SLABS	1.02	Slab Replacement - PCC	44.44 SY	$605.00	$26,889.11
KHS2	1	70 SCALING	H	3 SLABS	3.06	Slab Replacement - PCC	133.33 SY	$605.00	$80,667.34
KHS2	1	74 JOINT SPALL	L	17 SLABS	17.35	No Policy Action	0.00	$0.00	$0.00
KHS2	1	74 JOINT SPALL	M	1 SLABS	1.02	Patching - PCC Partial Depth	32.81 SF	$84.50	$2,772.31
KHS2	1	74 JOINT SPALL	H	5 SLABS	5.10	Patching - PCC Partial Depth	164.04 SF	$84.50	$13,861.53
KHS2	1	75 CORNER SPALL	L	1 SLABS	1.02	No Policy Action	0.00	$0.00	$0.00
KHS2	1	75 CORNER SPALL	M	1 SLABS	1.02	Patching - PCC Partial Depth	2.69 SF	$84.50	$227.39
KHS2	1	75 CORNER SPALL	H	2 SLABS	2.04	Patching - PCC Partial Depth	5.38 SF	$84.50	$454.77
					FY02		**Total Section Costs**		**$167,988.56**
		Recommended Maintenance Projects:			**FY09**	**Joint Sealant/PCC Repairs**	**Recommendation Cost**		**$200,000.00**

Naval Station Keflavik - Maintenance and Repair Report

Branch	Section	Distress Type and Severity		Distress Quantity	% Distress	Policy Action	Work Quantity	Unit Cost	Total Defect Cost
KHS2	2	43 BLOCK CR	L	51 SF	0.19	No Policy Action	0.00	$0.00	$0.00
KHS2	2	48 L & T CR	L	82 LF	0.30	No Policy Action	0.00	$0.00	$0.00
KHS2	2	48 L & T CR	M	121 LF	0.44	Crack Sealing - AC	121.24 LF	$4.30	$521.33
KHS2	2	50 PATCHING	M	41 SF	0.15	Patching - AC Deep	70.43 SF	$3.80	$267.63
					FY02		**Total Section Costs**		**$788.97**
		Recommended Maintenance Projects:				**None**	**Recommendation Cost**		**$0.00**
KHS3	1	62 CORNER BREAK	L	3 SLABS	3.06	No Policy Action	0.00	$0.00	$0.00
KHS3	1	65 JT SEAL DMG	M	98 SLABS	100.00	Joint Seal - Silicon	3,500.17 LF	$9.30	$32,551.59
KHS3	1	66 SMALL PATCH	L	13 SLABS	13.27	No Policy Action	0.00	$0.00	$0.00
KHS3	1	67 LARGE PATCH	L	1 SLABS	1.02	No Policy Action	0.00	$0.00	$0.00
KHS3	1	74 JOINT SPALL	L	10 SLABS	10.20	No Policy Action	0.00	$0.00	$0.00
KHS3	1	74 JOINT SPALL	M	2 SLABS	2.04	Patching - PCC Partial Depth	65.62 SF	$84.50	$5,544.61
KHS3	1	74 JOINT SPALL	H	2 SLABS	2.04	Patching - PCC Partial Depth	65.62 SF	$84.50	$5,544.61
KHS3	1	75 CORNER SPALL	L	8 SLABS	8.16	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$43,640.82**
		Recommended Maintenance Projects:			**FY09**	**Joint Sealant/PCC Repairs**	**Recommendation Cost**		**$50,000.00**
KHS3	2	41 ALLIGATOR CR	L	34 SF	0.28	No Policy Action	0.00	$0.00	$0.00
KHS3	2	45 DEPRESSION	L	7 SF	0.10	No Policy Action	0.00	$0.00	$0.00
KHS3	2	48 L & T CR	L	45 LF	0.37	No Policy Action	0.00	$0.00	$0.00
KHS3	2	48 L & T CR	M	48 LF	0.40	Crack Sealing - AC	47.59 LF	$4.30	$204.63
KHS3	2	50 PATCHING	H	36 SF	0.30	Patching - AC Deep	64.02 SF	$3.80	$243.28
KHS3	2	52 WEATH/RAVEL	L	25 SF	0.21	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$447.91**
		Recommended Maintenance Projects:				**None**	**Recommendation Cost**		**$0.00**
KHS4	1	63 LINEAR CR	L	2 SLABS	2.04	No Policy Action	0.00	$0.00	$0.00
KHS4	1	65 JT SEAL DMG	M	98 SLABS	100.00	Joint Seal - Silicon	3,500.17 LF	$9.30	$32,551.59
KHS4	1	66 SMALL PATCH	L	6 SLABS	6.12	No Policy Action	0.00	$0.00	$0.00
KHS4	1	66 SMALL PATCH	H	2 SLABS	2.04	Patching - PCC Partial Depth	5.38 SF	$84.50	$454.77
KHS4	1	74 JOINT SPALL	L	6 SLABS	6.12	No Policy Action	0.00	$0.00	$0.00
KHS4	1	74 JOINT SPALL	M	2 SLABS	2.04	Patching - PCC Partial Depth	65.62 SF	$84.50	$5,544.61
KHS4	1	74 JOINT SPALL	H	2 SLABS	2.04	Patching - PCC Partial Depth	65.62 SF	$84.50	$5,544.61
					FY02		**Total Section Costs**		**$44,095.59**
		Recommended Maintenance Projects:			**FY09**	**Joint Sealant/PCC Repairs**	**Recommendation Cost**		**$50,000.00**
KHS4	2	41 ALLIGATOR CR	L	57 SF	0.48	No Policy Action	0.00	$0.00	$0.00
KHS4	2	45 DEPRESSION	L	22 SF	0.18	No Policy Action	0.00	$0.00	$0.00
KHS4	2	48 L & T CR	L	60 LF	0.50	No Policy Action	0.00	$0.00	$0.00
KHS4	2	48 L & T CR	M	22 LF	0.19	Crack Sealing - AC	22.45 LF	$4.30	$96.52
					FY02		**Total Section Costs**		**$96.52**
		Recommended Maintenance Projects:				**None**	**Recommendation Cost**		**$0.00**

Naval Station Keflavik - Maintenance and Repair Report

Branch	Section	Distress Type and Severity	Distress Quantity	% Distress	Policy Action	Work Quantity	Unit Cost	Total Defect Cost
KHS5	1	62 CORNER BREAK L	6 SLABS	6.12	No Policy Action	0.00	$0.00	$0.00
KHS5	1	63 LINEAR CR L	4 SLABS	4.08	No Policy Action	0.00	$0.00	$0.00
KHS5	1	63 LINEAR CR M	2 SLABS	2.04	Crack Sealing - PCC	40.00 LF	$6.75	$270.01
KHS5	1	66 SMALL PATCH L	18 SLABS	18.37	No Policy Action	0.00	$0.00	$0.00
KHS5	1	66 SMALL PATCH H	4 SLABS	4.08	Patching - PCC Partial Depth	10.76 SF	$84.50	$909.55
KHS5	1	67 LARGE PATCH L	4 SLABS	4.08	No Policy Action	0.00	$0.00	$0.00
KHS5	1	67 LARGE PATCH M	2 SLABS	2.04	Patching - PCC Full Depth	196.85 SF	$49.30	$9,704.72
KHS5	1	72 SHAT. SLAB M	2 SLABS	2.04	Slab Replacement - PCC	88.89 SY	$605.00	$53,778.23
KHS5	1	74 JOINT SPALL L	24 SLABS	24.49	No Policy Action	0.00	$0.00	$0.00
KHS5	1	74 JOINT SPALL M	2 SLABS	2.04	Patching - PCC Partial Depth	65.62 SF	$84.50	$5,544.61
KHS5	1	74 JOINT SPALL H	6 SLABS	6.12	Patching - PCC Partial Depth	196.85 SF	$84.50	$16,633.84
KHS5	1	75 CORNER SPALL L	4 SLABS	4.08	No Policy Action	0.00	$0.00	$0.00
				FY02		**Total Section Costs**		**$86,840.96**
		Recommended Maintenance Projects:		**FY09**	**Joint Sealant/PCC Repairs**	**Recommendation Cost**		**$50,000.00**
KHS5	2	41 ALLIGATOR CR L	84 SF	0.31	No Policy Action	0.00	$0.00	$0.00
KHS5	2	41 ALLIGATOR CR M	41 SF	0.15	Patching - AC Deep	70.43 SF	$3.80	$267.63
KHS5	2	48 L & T CR L	150 LF	0.55	No Policy Action	0.00	$0.00	$0.00
KHS5	2	48 L & T CR M	69 LF	0.25	Crack Sealing - AC	69.28 LF	$4.30	$297.90
KHS5	2	49 OIL SPILLAGE L	3 SF	0.10	No Policy Action	0.00	$0.00	$0.00
KHS5	2	50 PATCHING H	41 SF	0.15	Patching - AC Deep	70.43 SF	$3.80	$267.63
				FY02		**Total Section Costs**		**$833.17**
		Recommended Maintenance Projects:			**None**	**Recommendation Cost**		**$0.00**
KHS6	1	62 CORNER BREAK L	3 SLABS	3.23	No Policy Action	0.00	$0.00	$0.00
KHS6	1	65 JT SEAL DMG H	98 SLABS	100.00	Joint Seal - Silicon	3,500.17 LF	$9.30	$32,551.59
KHS6	1	66 SMALL PATCH L	21 SLABS	20.97	No Policy Action	0.00	$0.00	$0.00
KHS6	1	67 LARGE PATCH L	2 SLABS	1.61	No Policy Action	0.00	$0.00	$0.00
KHS6	1	74 JOINT SPALL L	5 SLABS	4.84	No Policy Action	0.00	$0.00	$0.00
KHS6	1	74 JOINT SPALL M	2 SLABS	1.61	Patching - PCC Partial Depth	51.86 SF	$84.50	$4,382.03
KHS6	1	74 JOINT SPALL H	3 SLABS	3.23	Patching - PCC Partial Depth	103.72 SF	$84.50	$8,764.07
KHS6	1	75 CORNER SPALL L	6 SLABS	6.45	No Policy Action	0.00	$0.00	$0.00
KHS6	1	75 CORNER SPALL M	2 SLABS	1.61	Patching - PCC Partial Depth	4.25 SF	$84.50	$359.42
				FY02		**Total Section Costs**		**$46,057.11**
		Recommended Maintenance Projects:		**FY09**	**Joint Sealant/PCC Repairs**	**Recommendation Cost**		**$50,000.00**
KHS6	2	48 L & T CR L	111 LF	0.41	No Policy Action	0.00	$0.00	$0.00
KHS6	2	48 L & T CR M	147 LF	0.54	Crack Sealing - AC	146.71 LF	$4.30	$630.85
KHS6	2	52 WEATH/RAVEL L	306 SF	1.12	No Policy Action	0.00	$0.00	$0.00
				FY02		**Total Section Costs**		**$630.85**
		Recommended Maintenance Projects:			**None**	**Recommendation Cost**		**$0.00**
KHS7	1	65 JT SEAL DMG M	98 SLABS	100.00	Joint Seal - Silicon	3,500.17 LF	$9.30	$32,551.59
KHS7	1	66 SMALL PATCH L	8 SLABS	8.16	No Policy Action	0.00	$0.00	$0.00
KHS7	1	67 LARGE PATCH L	1 SLABS	1.02	No Policy Action	0.00	$0.00	$0.00
KHS7	1	74 JOINT SPALL L	5 SLABS	5.10	No Policy Action	0.00	$0.00	$0.00
KHS7	1	74 JOINT SPALL M	1 SLABS	1.02	Patching - PCC Partial Depth	32.81 SF	$84.50	$2,772.31
KHS7	1	74 JOINT SPALL H	2 SLABS	2.04	Patching - PCC Partial Depth	65.62 SF	$84.50	$5,544.61
KHS7	1	75 CORNER SPALL H	1 SLABS	1.02	Patching - PCC Partial Depth	2.69 SF	$84.50	$227.39
				FY02		**Total Section Costs**		**$41,095.90**
		Recommended Maintenance Projects:		**FY09**	**Joint Sealant/PCC Repairs**	**Recommendation Cost**		**$50,000.00**

Naval Station Keflavik - Maintenance and Repair Report

Branch	Section	Distress Type and Severity		Distress Quantity	% Distress	Policy Action	Work Quantity	Unit Cost	Total Defect Cost
KHS7	2	41 ALLIGATOR CR	L	54 SF	0.45	No Policy Action	0.00	$0.00	$0.00
KHS7	2	48 L & T CR	L	58 LF	0.49	No Policy Action	0.00	$0.00	$0.00
KHS7	2	52 WEATH/RAVEL	L	36 SF	0.30	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$0.00**
		Recommended Maintenance Projects:				**None**	**Recommendation Cost**		**$0.00**
KHS8	1	63 LINEAR CR	L	8 SLABS	8.16	No Policy Action	0.00	$0.00	$0.00
KHS8	1	65 JT SEAL DMG	H	98 SLABS	100.00	Joint Seal - Silicon	3,500.17 LF	$9.30	$32,551.59
KHS8	1	66 SMALL PATCH	L	6 SLABS	6.12	No Policy Action	0.00	$0.00	$0.00
KHS8	1	66 SMALL PATCH	M	2 SLABS	2.04	Patching - PCC Partial Depth	5.38 SF	$84.50	$454.77
KHS8	1	67 LARGE PATCH	L	6 SLABS	6.12	No Policy Action	0.00	$0.00	$0.00
KHS8	1	67 LARGE PATCH	M	2 SLABS	2.04	Patching - PCC Full Depth	196.85 SF	$49.30	$9,704.72
KHS8	1	74 JOINT SPALL	L	2 SLABS	2.04	No Policy Action	0.00	$0.00	$0.00
KHS8	1	74 JOINT SPALL	M	2 SLABS	2.04	Patching - PCC Partial Depth	65.62 SF	$84.50	$5,544.61
KHS8	1	75 CORNER SPALL	L	2 SLABS	2.04	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$48,255.69**
		Recommended Maintenance Projects:			**FY09**	**Joint Sealant/PCC Repairs**	**Recommendation Cost**		**$50,000.00**
KHS8	2	45 DEPRESSION	L	63 SF	0.52	No Policy Action	0.00	$0.00	$0.00
KHS8	2	48 L & T CR	L	23 LF	0.19	No Policy Action	0.00	$0.00	$0.00
KHS8	2	48 L & T CR	M	193 LF	1.61	Crack Sealing - AC	193.05 LF	$4.30	$830.10
KHS8	2	52 WEATH/RAVEL	L	76 SF	0.64	No Policy Action	0.00	$0.00	$0.00
KHS8	2	52 WEATH/RAVEL	M	13 SF	0.11	Patching - AC Shallow	13.46 SF	$2.53	$34.06
					FY02		**Total Section Costs**		**$864.16**
		Recommended Maintenance Projects:				**None**	**Recommendation Cost**		**$0.00**
KHS9	1	62 CORNER BREAK	L	1 SLABS	1.02	No Policy Action	0.00	$0.00	$0.00
KHS9	1	63 LINEAR CR	L	4 SLABS	4.08	No Policy Action	0.00	$0.00	$0.00
KHS9	1	63 LINEAR CR	M	1 SLABS	1.02	Crack Sealing - PCC	20.00 LF	$6.75	$135.01
KHS9	1	65 JT SEAL DMG	M	98 SLABS	100.00	Joint Seal - Silicon	3,500.17 LF	$9.30	$32,551.59
KHS9	1	66 SMALL PATCH	L	6 SLABS	6.12	No Policy Action	0.00	$0.00	$0.00
KHS9	1	67 LARGE PATCH	L	3 SLABS	3.06	No Policy Action	0.00	$0.00	$0.00
KHS9	1	67 LARGE PATCH	H	1 SLABS	1.02	Patching - PCC Full Depth	98.43 SF	$49.30	$4,852.36
KHS9	1	74 JOINT SPALL	L	2 SLABS	2.04	No Policy Action	0.00	$0.00	$0.00
KHS9	1	74 JOINT SPALL	H	3 SLABS	3.06	Patching - PCC Partial Depth	98.43 SF	$84.50	$8,316.92
					FY02		**Total Section Costs**		**$45,855.88**
		Recommended Maintenance Projects:			**FY09**	**Joint Sealant/PCC Repairs**	**Recommendation Cost**		**$50,000.00**
KHS9	2	48 L & T CR	L	51 LF	0.19	No Policy Action	0.00	$0.00	$0.00
KHS9	2	48 L & T CR	M	13 LF	0.10	Crack Sealing - AC	13.24 LF	$4.30	$56.95
KHS9	2	52 WEATH/RAVEL	L	216 SF	0.79	No Policy Action	0.00	$0.00	$0.00
KHS9	2	52 WEATH/RAVEL	M	139 SF	0.51	Patching - AC Shallow	138.52 SF	$2.53	$350.45
					FY02		**Total Section Costs**		**$407.40**
		Recommended Maintenance Projects:				**None**	**Recommendation Cost**		**$0.00**

Naval Station Keflavik - Maintenance and Repair Report

Branch	Section	Distress Type and Severity		Distress Quantity	% Distress	Policy Action	Work Quantity	Unit Cost	Total Defect Cost
KHS10	1	65 JT SEAL DMG	H	98 SLABS	100.00	Joint Seal - Silicon	3,500.17 LF	$9.30	$32,551.59
KHS10	1	66 SMALL PATCH	L	21 SLABS	21.43	No Policy Action	0.00	$0.00	$0.00
KHS10	1	66 SMALL PATCH	H	1 SLABS	1.02	Patching - PCC Partial Depth	2.69 SF	$84.50	$227.39
KHS10	1	67 LARGE PATCH	L	3 SLABS	3.06	No Policy Action	0.00	$0.00	$0.00
KHS10	1	74 JOINT SPALL	L	4 SLABS	4.08	No Policy Action	0.00	$0.00	$0.00
KHS10	1	74 JOINT SPALL	H	2 SLABS	2.04	Patching - PCC Partial Depth	65.62 SF	$84.50	$5,544.61
KHS10	1	75 CORNER SPALL	L	1 SLABS	1.02	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$38,323.59**
		Recommended Maintenance Projects:			**FY09**	**Joint Sealant/PCC Repairs**	**Recommendation Cost**		**$50,000.00**
KHS10	2	48 L & T CR	L	295 LF	1.08	No Policy Action	0.00	$0.00	$0.00
KHS10	2	48 L & T CR	M	71 LF	0.26	Crack Sealing - AC	70.88 LF	$4.30	$304.76
KHS10	2	50 PATCHING	L	773 SF	2.82	No Policy Action	0.00	$0.00	$0.00
KHS10	2	50 PATCHING	H	43 SF	0.16	Patching - AC Deep	73.32 SF	$3.80	$278.60
KHS10	2	52 WEATH/RAVEL	M	129 SF	0.47	Patching - AC Shallow	128.82 SF	$2.53	$325.92
					FY02		**Total Section Costs**		**$909.29**
		Recommended Maintenance Projects:				**None**	**Recommendation Cost**		**$0.00**
KHS11	1	63 LINEAR CR	L	1 SLABS	1.02	No Policy Action	0.00	$0.00	$0.00
KHS11	1	65 JT SEAL DMG	M	98 SLABS	100.00	Joint Seal - Silicon	3,500.17 LF	$9.30	$32,551.59
KHS11	1	66 SMALL PATCH	L	10 SLABS	10.20	No Policy Action	0.00	$0.00	$0.00
KHS11	1	66 SMALL PATCH	M	1 SLABS	1.02	Patching - PCC Partial Depth	2.69 SF	$84.50	$227.39
KHS11	1	67 LARGE PATCH	L	3 SLABS	3.06	No Policy Action	0.00	$0.00	$0.00
KHS11	1	74 JOINT SPALL	L	2 SLABS	2.04	No Policy Action	0.00	$0.00	$0.00
KHS11	1	74 JOINT SPALL	H	2 SLABS	2.04	Patching - PCC Partial Depth	65.62 SF	$84.50	$5,544.61
KHS11	1	75 CORNER SPALL	L	1 SLABS	1.02	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$38,323.59**
		Recommended Maintenance Projects:			**FY09**	**Joint Sealant/PCC Repairs**	**Recommendation Cost**		**$50,000.00**
KHS11	2	48 L & T CR	L	40 LF	0.33	No Policy Action	0.00	$0.00	$0.00
KHS11	2	48 L & T CR	M	17 LF	0.14	Crack Sealing - AC	17.00 LF	$4.30	$73.11
KHS11	2	52 WEATH/RAVEL	L	68 SF	0.57	No Policy Action	0.00	$0.00	$0.00
KHS11	2	52 WEATH/RAVEL	M	36 SF	0.30	Patching - AC Shallow	35.99 SF	$2.53	$91.07
					FY02		**Total Section Costs**		**$164.18**
		Recommended Maintenance Projects:				**None**	**Recommendation Cost**		**$0.00**

Naval Station Keflavik - Maintenance and Repair Report

Branch	Section	Distress Type and Severity	Distress Quantity	% Distress	Policy Action	Work Quantity	Unit Cost	Total Defect Cost
MHA	1	62 CORNER BREAK L	13 SLABS	1.00	No Policy Action	0.00	$0.00	$0.00
MHA	1	62 CORNER BREAK M	3 SLABS	1.00	Patching - PCC Full Depth	107.30 SF	$49.30	$5,290.02
MHA	1	63 LINEAR CR L	100 SLABS	6.25	No Policy Action	0.00	$0.00	$0.00
MHA	1	63 LINEAR CR M	47 SLABS	2.92	Crack Sealing - PCC	1,395.69 LF	$6.75	$9,420.95
MHA	1	63 LINEAR CR H	13 SLABS	1.00	Crack Sealing - PCC	398.77 LF	$6.75	$2,691.70
MHA	1	65 JT SEAL DMG L	66 SLABS	4.17	No Policy Action	0.00	$0.00	$0.00
MHA	1	65 JT SEAL DMG M	1,063 SLABS	66.67	Joint Seal - Silicon	85,235.41 LF	$9.30	$792,689.25
MHA	1	65 JT SEAL DMG H	465 SLABS	29.17	Joint Seal - Silicon	37,290.49 LF	$9.30	$346,801.56
MHA	1	66 SMALL PATCH L	322 SLABS	20.21	No Policy Action	0.00	$0.00	$0.00
MHA	1	66 SMALL PATCH M	3 SLABS	1.00	Patching - PCC Partial Depth	8.94 SF	$84.50	$755.59
MHA	1	67 LARGE PATCH L	106 SLABS	6.67	No Policy Action	0.00	$0.00	$0.00
MHA	1	67 LARGE PATCH M	7 SLABS	1.00	Patching - PCC Full Depth	654.12 SF	$49.30	$32,247.96
MHA	1	67 LARGE PATCH H	10 SLABS	1.00	Patching - PCC Full Depth	981.18 SF	$49.30	$48,371.94
MHA	1	72 SHAT. SLAB H	3 SLABS	1.00	Slab Replacement - PCC	295.37 SY	$605.00	$178,700.56
MHA	1	74 JOINT SPALL L	163 SLABS	10.21	No Policy Action	0.00	$0.00	$0.00
MHA	1	74 JOINT SPALL M	100 SLABS	6.25	Patching - PCC Partial Depth	3,270.58 SF	$84.50	$276,364.34
MHA	1	74 JOINT SPALL H	73 SLABS	4.58	Patching - PCC Partial Depth	2,398.43 SF	$84.50	$202,667.20
MHA	1	75 CORNER SPALL L	80 SLABS	5.00	No Policy Action	0.00	$0.00	$0.00
MHA	1	75 CORNER SPALL M	23 SLABS	1.46	Patching - PCC Partial Depth	62.59 SF	$84.50	$5,289.13
MHA	1	75 CORNER SPALL H	23 SLABS	1.46	Patching - PCC Partial Depth	62.59 SF	$84.50	$5,289.13
				FY02		**Total Section Costs**		**$1,906,579.33**
		Recommended Maintenance Projects:		**FY03**	**Joint Sealant/PCC Repairs**	**Recommendation Cost**		**$2,100,000.00**
NCA	1	65 JT SEAL DMG L	73 SLABS	33.33	No Policy Action	0.00	$0.00	$0.00
NCA	1	65 JT SEAL DMG M	147 SLABS	66.67	Joint Seal - Silicon	6,791.66 LF	$9.30	$63,162.48
NCA	1	74 JOINT SPALL L	4 SLABS	1.67	No Policy Action	0.00	$0.00	$0.00
				FY02		**Total Section Costs**		**$63,162.48**
		Recommended Maintenance Projects:			**None**	**Recommendation Cost**		**$0.00**
NCA	2	48 L & T CR L	65 LF	0.10	No Policy Action	0.00	$0.00	$0.00
				FY02		**Total Section Costs**		**$0.00**
		Recommended Maintenance Projects:			**None**	**Recommendation Cost**		**$0.00**
OA	1	62 CORNER BREAK M	3 SLABS	1.00	Patching - PCC Full Depth	106.38 SF	$49.30	$5,244.69
OA	1	63 LINEAR CR L	10 SLABS	1.67	No Policy Action	0.00	$0.00	$0.00
OA	1	65 JT SEAL DMG L	132 SLABS	22.22	No Policy Action	0.00	$0.00	$0.00
OA	1	65 JT SEAL DMG M	132 SLABS	22.22	Joint Seal - Silicon	5,711.39 LF	$9.30	$53,115.92
OA	1	65 JT SEAL DMG H	329 SLABS	55.56	Joint Seal - Silicon	14,278.48 LF	$9.30	$132,789.81
OA	1	66 SMALL PATCH L	69 SLABS	11.67	No Policy Action	0.00	$0.00	$0.00
OA	1	66 SMALL PATCH M	3 SLABS	1.00	Patching - PCC Partial Depth	8.87 SF	$84.50	$749.12
OA	1	67 LARGE PATCH L	33 SLABS	5.56	No Policy Action	0.00	$0.00	$0.00
OA	1	74 JOINT SPALL L	23 SLABS	3.89	No Policy Action	0.00	$0.00	$0.00
OA	1	74 JOINT SPALL M	7 SLABS	1.11	Patching - PCC Partial Depth	216.17 SF	$84.50	$18,266.42
OA	1	74 JOINT SPALL H	20 SLABS	3.33	Patching - PCC Partial Depth	648.51 SF	$84.50	$54,799.27
OA	1	75 CORNER SPALL L	26 SLABS	4.44	No Policy Action	0.00	$0.00	$0.00
OA	1	75 CORNER SPALL H	3 SLABS	1.00	Patching - PCC Partial Depth	8.87 SF	$84.50	$749.12
				FY02		**Total Section Costs**		**$265,714.34**
		Recommended Maintenance Projects:		**FY03**	**Joint Sealant/PCC Repairs**	**Recommendation Cost**		**$300,000.00**

Naval Station Keflavik - Maintenance and Repair Report

Branch	Section	Distress Type and Severity		Distress Quantity	% Distress	Policy Action	Work Quantity	Unit Cost	Total Defect Cost
OA	2	65 JT SEAL DMG	L	49 SLABS	100.00	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$0.00**
		Recommended Maintenance Projects:			**FY11**	**Joint Sealant/PCC Repairs**	**Recommendation Cost**		**$500,000.00**
OA	3	63 LINEAR CR	L	4 SLABS	7.32	No Policy Action	0.00	$0.00	$0.00
OA	3	63 LINEAR CR	H	1 SLABS	2.44	Crack Sealing - PCC	17.50 LF	$6.75	$118.15
OA	3	65 JT SEAL DMG	L	52 SLABS	100.00	No Policy Action	0.00	$0.00	$0.00
OA	3	74 JOINT SPALL	M	1 SLABS	2.44	Patching - PCC Partial Depth	27.67 SF	$84.50	$2,338.20
OA	3	75 CORNER SPALL	L	4 SLABS	7.32	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$2,456.35**
		Recommended Maintenance Projects:			**FY03**	**Joint Sealant/PCC Repairs**	**Recommendation Cost**		**$100,000.00**
PSA1	1	62 CORNER BREAK	L	2.00 SLABS	5.71	No Policy Action	0.00	$0.00	$0.00
PSA1	1	63 LINEAR CR	L	1.00 SLABS	2.86	No Policy Action	0.00	$0.00	$0.00
PSA1	1	65 JT SEAL DMG	H	35.00 SLABS	100.00	Joint Seal - Silicon	990.46 LF	$9.30	$9,211.27
					FY02		**Total Section Costs**		**$9,211.27**
		Recommended Maintenance Projects:			**FY03**	**Joint Sealant/PCC Repairs**	**Recommendation Cost**		**$15,000.00**
PSA2	1	63 LINEAR CR	L	2.00 SLABS	5.71	No Policy Action	0.00	$0.00	$0.00
PSA2	1	65 JT SEAL DMG	H	35.00 SLABS	100.00	Joint Seal - Silicon	990.46 LF	$9.30	$9,211.27
					FY02		**Total Section Costs**		**$9,211.27**
		Recommended Maintenance Projects:			**FY03**	**Joint Sealant/PCC Repairs**	**Recommendation Cost**		**$15,000.00**
PSA3	1	62 CORNER BREAK	L	2.00 SLABS	5.71	No Policy Action	0.00	$0.00	$0.00
PSA3	1	63 LINEAR CR	L	3.00 SLABS	8.57	No Policy Action	0.00	$0.00	$0.00
PSA3	1	65 JT SEAL DMG	H	35.00 SLABS	100.00	Joint Seal - Silicon	990.46 LF	$9.30	$9,211.27
					FY02		**Total Section Costs**		**$9,211.27**
		Recommended Maintenance Projects:			**FY03**	**Joint Sealant/PCC Repairs**	**Recommendation Cost**		**$15,000.00**
PSA4	1	62 CORNER BREAK	L	0.91 SLABS	2.86	No Policy Action	0.00	$0.00	$0.00
PSA4	1	63 LINEAR CR	L	4.57 SLABS	14.29	No Policy Action	0.00	$0.00	$0.00
PSA4	1	65 JT SEAL DMG	H	32.00 SLABS	100.00	Joint Seal - Silicon	905.56 LF	$9.30	$8,421.73
PSA4	1	75 CORNER SPALL	L	0.91 SLABS	2.86	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$8,421.73**
		Recommended Maintenance Projects:			**FY03**	**Joint Sealant/PCC Repairs**	**Recommendation Cost**		**$15,000.00**
PSA5	1	62 CORNER BREAK	L	1.00 SLABS	2.86	No Policy Action	0.00	$0.00	$0.00
PSA5	1	63 LINEAR CR	L	2.00 SLABS	5.71	No Policy Action	0.00	$0.00	$0.00
PSA5	1	65 JT SEAL DMG	H	35.00 SLABS	100.00	Joint Seal - Silicon	990.46 LF	$9.30	$9,211.27
PSA5	1	75 CORNER SPALL	M	1.00 SLABS	2.86	Patching - PCC Partial Depth	2.69 SF	$84.50	$227.39
					FY02		**Total Section Costs**		**$9,438.66**
		Recommended Maintenance Projects:			**FY03**	**Joint Sealant/PCC Repairs**	**Recommendation Cost**		**$15,000.00**

Naval Station Keflavik - Maintenance and Repair Report

Branch	Section	Distress Type and Severity	Distress Quantity	% Distress	Policy Action	Work Quantity	Unit Cost	Total Defect Cost
PSA6	1	62 CORNER BREAK L	2.00 SLABS	5.71	No Policy Action	0.00	$0.00	$0.00
PSA6	1	63 LINEAR CR L	3.00 SLABS	8.57	No Policy Action	0.00	$0.00	$0.00
PSA6	1	65 JT SEAL DMG H	35.00 SLABS	100.00	Joint Seal - Silicon	990.46 LF	$9.30	$9,211.27
PSA6	1	74 JOINT SPALL L	1.00 SLABS	2.86	No Policy Action	0.00	$0.00	$0.00
				FY02		**Total Section Costs**		**$9,211.27**
		Recommended Maintenance Projects:		**FY03**	**Joint Sealant/PCC Repairs**	**Recommendation Cost**		**$15,000.00**
PSA7	1	63 LINEAR CR L	6.00 SLABS	17.14	No Policy Action	0.00	$0.00	$0.00
PSA7	1	65 JT SEAL DMG H	35.00 SLABS	100.00	Joint Seal - Silicon	990.46 LF	$9.30	$9,211.27
PSA7	1	75 CORNER SPALL L	1.00 SLABS	2.86	No Policy Action	0.00	$0.00	$0.00
				FY02		**Total Section Costs**		**$9,211.27**
		Recommended Maintenance Projects:		**FY03**	**Joint Sealant/PCC Repairs**	**Recommendation Cost**		**$15,000.00**
PSA8	1	62 CORNER BREAK L	1.00 SLABS	2.86	No Policy Action	0.00	$0.00	$0.00
PSA8	1	63 LINEAR CR L	1.00 SLABS	2.86	No Policy Action	0.00	$0.00	$0.00
PSA8	1	65 JT SEAL DMG H	35.00 SLABS	100.00	Joint Seal - Silicon	990.46 LF	$9.30	$9,211.27
PSA8	1	75 CORNER SPALL M	1.00 SLABS	2.86	Patching - PCC Partial Depth	2.69 SF	$84.50	$227.39
				FY02		**Total Section Costs**		**$9,438.66**
		Recommended Maintenance Projects:		**FY03**	**Joint Sealant/PCC Repairs**	**Recommendation Cost**		**$15,000.00**
PSA9	1	62 CORNER BREAK L	2.00 SLABS	5.71	No Policy Action	0.00	$0.00	$0.00
PSA9	1	63 LINEAR CR L	1.00 SLABS	2.86	No Policy Action	0.00	$0.00	$0.00
PSA9	1	64 DURABIL. CR L	1.00 SLABS	2.86	No Policy Action	0.00	$0.00	$0.00
PSA9	1	65 JT SEAL DMG H	35.00 SLABS	100.00	Joint Seal - Silicon	990.46 LF	$9.30	$9,211.27
PSA9	1	74 JOINT SPALL L	1.00 SLABS	2.86	No Policy Action	0.00	$0.00	$0.00
PSA9	1	74 JOINT SPALL M	1.00 SLABS	2.86	Patching - PCC Partial Depth	26.16 SF	$84.50	$2,210.91
				FY02		**Total Section Costs**		**$11,422.18**
		Recommended Maintenance Projects:		**FY03**	**Joint Sealant/PCC Repairs**	**Recommendation Cost**		**$15,000.00**
PSA10	1	63 LINEAR CR L	1.00 SLABS	2.86	No Policy Action	0.00	$0.00	$0.00
PSA10	1	65 JT SEAL DMG H	35.00 SLABS	100.00	Joint Seal - Silicon	990.46 LF	$9.30	$9,211.27
				FY02		**Total Section Costs**		**$9,211.27**
		Recommended Maintenance Projects:		**FY03**	**Joint Sealant/PCC Repairs**	**Recommendation Cost**		**$15,000.00**
PSA11	1	63 LINEAR CR L	1.00 SLABS	2.86	No Policy Action	0.00	$0.00	$0.00
PSA11	1	65 JT SEAL DMG H	35.00 SLABS	100.00	Joint Seal - Silicon	990.46 LF	$9.30	$9,211.27
				FY02		**Total Section Costs**		**$9,211.27**
		Recommended Maintenance Projects:		**FY03**	**Joint Sealant/PCC Repairs**	**Recommendation Cost**		**$15,000.00**

Naval Station Keflavik - Maintenance and Repair Report

Branch	Section	Distress Type and Severity		Distress Quantity	% Distress	Policy Action	Work Quantity	Unit Cost	Total Defect Cost
PSA12	1	63 LINEAR CR	L	1.00 SLABS	2.86	No Policy Action	0.00	$0.00	$0.00
PSA12	1	65 JT SEAL DMG	H	35.00 SLABS	100.00	Joint Seal - Silicon	990.46 LF	$9.30	$9,211.27
					FY02		**Total Section Costs**		**$9,211.27**
		Recommended Maintenance Projects:			**FY03**	**Joint Sealant/PCC Repairs**	**Recommendation Cost**		**$15,000.00**
PSA14	1	63 LINEAR CR	L	2.00 SLABS	5.71	No Policy Action	0.00	$0.00	$0.00
PSA14	1	65 JT SEAL DMG	H	35.00 SLABS	100.00	Joint Seal - Silicon	990.46 LF	$9.30	$9,211.27
PSA14	1	74 JOINT SPALL	M	1.00 SLABS	2.86	Patching - PCC Partial Depth	26.16 SF	$84.50	$2,210.91
					FY02		**Total Section Costs**		**$11,422.18**
		Recommended Maintenance Projects:			**FY03**	**Joint Sealant/PCC Repairs**	**Recommendation Cost**		**$15,000.00**
R11	1A	41 ALLIGATOR CR	L	98.95 SF	0.10	No Policy Action	0.00	$0.00	$0.00
R11	1A	42 BLEEDING	L	424.05 SF	0.30	No Policy Action	0.00	$0.00	$0.00
R11	1A	48 L & T CR	L	3,483.82 LF	2.46	No Policy Action	0.00	$0.00	$0.00
R11	1A	48 L & T CR	M	424.17 LF	0.30	Crack Sealing - AC	424.19 LF	$4.30	$1,824.00
R11	1A	48 L & T CR	H	141.39 LF	0.10	Crack Sealing - AC	141.40 LF	$4.30	$608.00
R11	1A	49 OIL SPILLAGE	L	528.65 SF	0.37	No Policy Action	0.00	$0.00	$0.00
R11	1A	50 PATCHING	L	18,293.69 SF	12.93	No Policy Action	0.00	$0.00	$0.00
R11	1A	52 WEATH/RAVEL	L	1,744.28 SF	1.23	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$2,432.00**
		Recommended Maintenance Projects:			**FY02**	**Resurface RWY with 2" AC**	**Recommendation Cost**		**$4,500,000.00**
R11	1B	48 L & T CR	L	1,784.32 LF	1.26	No Policy Action	0.00	$0.00	$0.00
R11	1B	50 PATCHING	L	251.61 SF	0.18	No Policy Action	0.00	$0.00	$0.00
R11	1B	52 WEATH/RAVEL	L	1,526.59 SF	1.08	No Policy Action	0.00	$0.00	$0.00
R11	1B	52 WEATH/RAVEL	M	16,933.89 SF	11.97	Patching - AC Shallow	16,933.87 SF	$2.53	$42,842.74
R11	1B	52 WEATH/RAVEL	H	101.77 SF	0.10	Patching - AC Shallow	101.77 SF	$2.53	$257.49
					FY02		**Total Section Costs**		**$43,100.23**
		Recommended Maintenance Projects:			**FY02**	**Resurface RWY with 2" AC**	**Recommendation Cost**		**$4,500,000.00**
R11	2A	42 BLEEDING	L	297.81 SF	0.12	No Policy Action	0.00	$0.00	$0.00
R11	2A	48 L & T CR	L	3,550.85 LF	1.49	No Policy Action	0.00	$0.00	$0.00
R11	2A	48 L & T CR	M	139.02 LF	0.10	Crack Sealing - AC	139.02 LF	$4.30	$597.80
R11	2A	50 PATCHING	L	69,159.82 SF	29.00	No Policy Action	0.00	$0.00	$0.00
R11	2A	52 WEATH/RAVEL	L	5,710.04 SF	2.39	No Policy Action	0.00	$0.00	$0.00
R11	2A	52 WEATH/RAVEL	M	222.37 SF	0.10	Patching - AC Shallow	222.37 SF	$2.53	$562.59
R11	2A	52 WEATH/RAVEL	H	79.42 SF	0.10	Patching - AC Shallow	79.42 SF	$2.53	$200.92
					FY02		**Total Section Costs**		**$1,361.31**
		Recommended Maintenance Projects:			**FY02**	**Resurface RWY with 2" AC**	**Recommendation Cost**		**$4,500,000.00**
R11	2B	48 L & T CR	L	5,997.53 LF	2.52	No Policy Action	0.00	$0.00	$0.00
R11	2B	50 PATCHING	L	412.97 SF	0.17	No Policy Action	0.00	$0.00	$0.00
R11	2B	52 WEATH/RAVEL	L	357.37 SF	0.15	No Policy Action	0.00	$0.00	$0.00
R11	2B	52 WEATH/RAVEL	M	4,284.52 SF	1.80	Patching - AC Shallow	4,284.51 SF	$2.53	$10,839.83
					FY02		**Total Section Costs**		**$10,839.83**
		Recommended Maintenance Projects:			**FY02**	**Resurface RWY with 2" AC**	**Recommendation Cost**		**$4,500,000.00**

Naval Station Keflavik - Maintenance and Repair Report

Branch	Section	Distress Type and Severity		Distress Quantity	% Distress	Policy Action	Work Quantity	Unit Cost	Total Defect Cost
R11	3A	42 BLEEDING	L	2,270.99 SF	0.36	No Policy Action	0.00	$0.00	$0.00
R11	3A	48 L & T CR	L	7,993.69 LF	1.28	No Policy Action	0.00	$0.00	$0.00
R11	3A	48 L & T CR	M	210.86 LF	0.10	Crack Sealing - AC	210.88 LF	$4.30	$906.76
R11	3A	50 PATCHING	L	62,562.36 SF	10.03	No Policy Action	0.00	$0.00	$0.00
R11	3A	52 WEATH/RAVEL	L	21,272.54 SF	3.41	No Policy Action	0.00	$0.00	$0.00
R11	3A	52 WEATH/RAVEL	M	11,422.01 SF	1.83	Patching - AC Shallow	11,422.00 SF	$2.53	$28,897.71
					FY02		**Total Section Costs**		**$29,804.47**
		Recommended Maintenance Projects:			**FY02**	**Resurface RWY with 2" AC**	**Recommendation Cost**		**$4,500,000.00**
R11	3B	41 ALLIGATOR CR	L	689.92 SF	0.11	No Policy Action	0.00	$0.00	$0.00
R11	3B	48 L & T CR	L	1,389.79 LF	0.22	No Policy Action	0.00	$0.00	$0.00
R11	3B	50 PATCHING	L	1,437.62 SF	0.23	No Policy Action	0.00	$0.00	$0.00
R11	3B	52 WEATH/RAVEL	L	16,423.94 SF	2.63	No Policy Action	0.00	$0.00	$0.00
R11	3B	52 WEATH/RAVEL	M	9,543.90 SF	1.53	Patching - AC Shallow	9,543.89 SF	$2.53	$24,146.07
					FY02		**Total Section Costs**		**$24,146.07**
		Recommended Maintenance Projects:			**FY02**	**Resurface RWY with 2" AC**	**Recommendation Cost**		**$4,500,000.00**
R2	1A	42 BLEEDING	L	5.83 SF	0.10	No Policy Action	0.00	$0.00	$0.00
R2	1A	48 L & T CR	L	967.57 LF	0.28	No Policy Action	0.00	$0.00	$0.00
R2	1A	49 OIL SPILLAGE	L	163.16 SF	0.10	No Policy Action	0.00	$0.00	$0.00
R2	1A	50 PATCHING	L	24,835.54 SF	7.10	No Policy Action	0.00	$0.00	$0.00
R2	1A	52 WEATH/RAVEL	L	4,265.51 SF	1.22	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$0.00**
		Recommended Maintenance Projects:			**FY04**	**Resurface with 2"AC**	**Recommendation Cost**		**$1,850,000.00**
R2	1B	48 L & T CR	L	5,403.25 LF	1.54	No Policy Action	0.00	$0.00	$0.00
R2	1B	48 L & T CR	M	209.83 LF	0.10	Crack Sealing - AC	209.85 LF	$4.30	$902.33
R2	1B	50 PATCHING	L	664.30 SF	0.19	No Policy Action	0.00	$0.00	$0.00
R2	1B	52 WEATH/RAVEL	L	24,812.23 SF	7.09	No Policy Action	0.00	$0.00	$0.00
R2	1B	52 WEATH/RAVEL	M	13,717.24 SF	3.92	Patching - AC Shallow	13,717.22 SF	$2.53	$34,704.62
R2	1B	52 WEATH/RAVEL	H	14,568.01 SF	4.16	Patching - AC Shallow	14,568.00 SF	$2.53	$36,857.07
					FY02		**Total Section Costs**		**$72,464.03**
		Recommended Maintenance Projects:			**FY04**	**Resurface with 2"AC**	**Recommendation Cost**		**$1,850,000.00**
R2	2A	48 L & T CR	L	915.08 LF	0.38	No Policy Action	0.00	$0.00	$0.00
R2	2A	50 PATCHING	L	17,141.17 SF	7.11	No Policy Action	0.00	$0.00	$0.00
R2	2A	52 WEATH/RAVEL	L	182.97 SF	0.10	No Policy Action	0.00	$0.00	$0.00
R2	2A	52 WEATH/RAVEL	M	115.56 SF	0.10	Patching - AC Shallow	115.56 SF	$2.53	$292.36
					FY02		**Total Section Costs**		**$292.36**
		Recommended Maintenance Projects:			**FY04**	**Resurface with 2"AC**	**Recommendation Cost**		**$1,850,000.00**

Naval Station Keflavik - Maintenance and Repair Report

Branch	Section	Distress Type and Severity		Distress Quantity	% Distress	Policy Action	Work Quantity	Unit Cost	Total Defect Cost
R2	2B	48 L & T CR	L	3,371.35 LF	1.40	No Policy Action	0.00	$0.00	$0.00
R2	2B	52 WEATH/RAVEL	L	240.75 SF	0.10	No Policy Action	0.00	$0.00	$0.00
R2	2B	52 WEATH/RAVEL	M	6,018.67 SF	2.50	Patching - AC Shallow	6,018.66 SF	$2.53	$15,227.23
R2	2B	52 WEATH/RAVEL	H	33,839.36 SF	14.04	Patching - AC Shallow	33,839.33 SF	$2.53	$85,613.60
					FY02		**Total Section Costs**		**$100,840.84**
		Recommended Maintenance Projects:			**FY04**	**Resurface with 2"AC**	**Recommendation Cost**		**$1,850,000.00**
R7	1A	48 L & T CR	L	492 LF	0.11	No Policy Action	0.00	$0.00	$0.00
R7	1A	52 WEATH/RAVEL	L	1,214 SF	0.27	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$0.00**
		Recommended Maintenance Projects:				**None**	**Recommendation Cost**		**$0.00**
R7	1B	41 ALLIGATOR CR	L	352 SF	0.10	No Policy Action	0.00	$0.00	$0.00
R7	1B	48 L & T CR	L	45 LF	0.10	No Policy Action	0.00	$0.00	$0.00
R7	1B	49 OIL SPILLAGE	L	192 SF	0.10	No Policy Action	0.00	$0.00	$0.00
R7	1B	52 WEATH/RAVEL	L	7,159 SF	1.60	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$0.00**
		Recommended Maintenance Projects:				**None**	**Recommendation Cost**		**$0.00**
R7	2A	48 L & T CR	L	13 LF	0.10	No Policy Action	0.00	$0.00	$0.00
R7	2A	50 PATCHING	L	22 SF	0.10	No Policy Action	0.00	$0.00	$0.00
R7	2A	52 WEATH/RAVEL	L	1,376 SF	0.62	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$0.00**
		Recommended Maintenance Projects:				**None**	**Recommendation Cost**		**$0.00**
R7	2B	48 L & T CR	L	27 LF	0.10	No Policy Action	0.00	$0.00	$0.00
R7	2B	49 OIL SPILLAGE	L	31 SF	0.10	No Policy Action	0.00	$0.00	$0.00
R7	2B	52 WEATH/RAVEL	L	2,235 SF	1.01	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$0.00**
		Recommended Maintenance Projects:				**None**	**Recommendation Cost**		**$0.00**
TA	1	48 L & T CR	L	167 LF	0.16	No Policy Action	0.00	$0.00	$0.00
TA	1	52 WEATH/RAVEL	L	214 SF	0.20	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$0.00**
		Recommended Maintenance Projects:				**None**	**Recommendation Cost**		**$0.00**
TC	2	41 ALLIGATOR CR	L	8,711.99 SF	13.23	No Policy Action	0.00	$0.00	$0.00
TC	2	41 ALLIGATOR CR	M	7,536.19 SF	11.45	Patching - AC Deep	7,889.59 SF	$3.80	$29,980.43
TC	2	41 ALLIGATOR CR	H	2,517.32 SF	3.82	Patching - AC Deep	2,723.26 SF	$3.80	$10,348.40
TC	2	45 DEPRESSION	L	118.37 SF	0.18	No Policy Action	0.00	$0.00	$0.00
TC	2	48 L & T CR	L	2,281.19 LF	3.47	No Policy Action	0.00	$0.00	$0.00
TC	2	48 L & T CR	M	1,065.61 LF	1.62	Crack Sealing - AC	1,065.66 LF	$4.30	$4,582.33
TC	2	48 L & T CR	H	1,305.04 LF	1.98	Crack Sealing - AC	1,305.10 LF	$4.30	$5,611.94
TC	2	50 PATCHING	L	1,893.91 SF	2.88	No Policy Action	0.00	$0.00	$0.00
TC	2	50 PATCHING	M	31.57 SF	0.10	Patching - AC Deep	58.18 SF	$3.80	$221.08
TC	2	52 WEATH/RAVEL	M	39,982.58 SF	60.74	Patching - AC Shallow	39,982.54 SF	$2.53	$101,155.95
TC	2	52 WEATH/RAVEL	H	12,573.47 SF	19.10	Patching - AC Shallow	12,573.46 SF	$2.53	$31,810.88
					FY02		**Total Section Costs**		**$183,711.01**
		Recommended Maintenance Projects:			**FY04**	**Reconstruct and Widen**	**Recommendation Cost**		**$2,750,000.00**

Naval Station Keflavik - Maintenance and Repair Report

Branch	Section	Distress Type and Severity		Distress Quantity	% Distress	Policy Action	Work Quantity	Unit Cost	Total Defect Cost
TC	3	41 ALLIGATOR CR	L	882.27 SF	0.77	No Policy Action	0.00	$0.00	$0.00
TC	3	48 L & T CR	L	1,933.84 LF	1.68	No Policy Action	0.00	$0.00	$0.00
TC	3	48 L & T CR	M	1,277.71 LF	1.11	Crack Sealing - AC	1,277.78 LF	$4.30	$5,494.44
TC	3	52 WEATH/RAVEL	L	916.80 SF	0.80	No Policy Action	0.00	$0.00	$0.00
TC	3	52 WEATH/RAVEL	M	2,838.61 SF	2.46	Patching - AC Shallow	2,838.61 SF	$2.53	$7,181.70
					FY02		**Total Section Costs**		**$12,676.13**
		Recommended Maintenance Projects:			**FY04**	**Overlay with 2" AC**	**Recommendation Cost**		**$300,000.00**
TD	1	48 L & T CR	L	659 LF	1.70	No Policy Action	0.00	$0.00	$0.00
TD	1	50 PATCHING	L	465 SF	1.20	No Policy Action	0.00	$0.00	$0.00
TD	1	52 WEATH/RAVEL	L	7,824 SF	20.18	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$0.00**
		Recommended Maintenance Projects:				**None**	**Recommendation Cost**		**$0.00**
TD	2	48 L & T CR	L	102 LF	0.10	No Policy Action	0.00	$0.00	$0.00
TD	2	50 PATCHING	L	2,557 SF	0.50	No Policy Action	0.00	$0.00	$0.00
TD	2	52 WEATH/RAVEL	L	818 SF	0.16	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$0.00**
		Recommended Maintenance Projects:				**None**	**Recommendation Cost**		**$0.00**
TE	1	49 OIL SPILLAGE	L	13 SF	0.10	No Policy Action	0.00	$0.00	$0.00
TE	1	52 WEATH/RAVEL	L	9 SF	0.10	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$0.00**
		Recommended Maintenance Projects:				**None**	**Recommendation Cost**		**$0.00**
TE	2	65 JT SEAL DMG	M	64.33 SLABS	33.33	Joint Seal - Silicon	2,285.11 LF	$9.30	$21,251.54
TE	2	65 JT SEAL DMG	H	128.67 SLABS	66.67	Joint Seal - Silicon	4,570.22 LF	$9.30	$42,503.07
TE	2	74 JOINT SPALL	L	3.22 SLABS	1.67	No Policy Action	0.00	$0.00	$0.00
TE	2	75 CORNER SPALL	L	3.22 SLABS	1.67	No Policy Action	0.00	$0.00	$0.00
TE	2	75 CORNER SPALL	H	3.22 SLABS	1.67	Patching - PCC Partial Depth	8.66 SF	$84.50	$731.43
					FY02		**Total Section Costs**		**$64,486.03**
		Recommended Maintenance Projects:				**None**	**Recommendation Cost**		**$0.00**
TE	2A	48 L & T CR	L	0.00 LF	1.18	No Policy Action	0.00	$0.00	$0.00
TE	2A	48 L & T CR	M	0.00 LF	0.51	Crack Sealing - AC	0.00 LF	$4.30	$0.00
TE	2A	52 WEATH/RAVEL	L	0.00 SF	0.10	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$0.00**
		Recommended Maintenance Projects:				**None**	**Recommendation Cost**		**$0.00**

Naval Station Keflavik - Maintenance and Repair Report

Branch	Section	Distress Type and Severity		Distress Quantity	% Distress	Policy Action	Work Quantity	Unit Cost	Total Defect Cost
TE	3	41 ALLIGATOR CR	L	5,048.67 SF	0.76	No Policy Action	0.00	$0.00	$0.00
TE	3	41 ALLIGATOR CR	M	236.80 SF	0.10	Patching - AC Deep	302.74 SF	$3.80	$1,150.42
TE	3	45 DEPRESSION	L	1,345.05 SF	0.20	No Policy Action	0.00	$0.00	$0.00
TE	3	48 L & T CR	L	3,211.92 LF	0.48	No Policy Action	0.00	$0.00	$0.00
TE	3	49 OIL SPILLAGE	L	189.44 SF	0.10	No Policy Action	0.00	$0.00	$0.00
TE	3	50 PATCHING	L	43,051.05 SF	6.49	No Policy Action	0.00	$0.00	$0.00
TE	3	52 WEATH/RAVEL	L	15,127.07 SF	2.28	No Policy Action	0.00	$0.00	$0.00
TE	3	52 WEATH/RAVEL	M	113.67 SF	0.10	Patching - AC Shallow	113.67 SF	$2.53	$287.58
					FY02		**Total Section Costs**		**$1,437.99**
		Recommended Maintenance Projects:			**FY03**	**Overlay with 2" AC**	**Recommendation Cost**		**$1,000,000.00**
TE	4	65 JT SEAL DMG	H	142.00 SLABS	100.00	Joint Seal - Silicon	4,630.59 LF	$9.30	$43,064.51
TE	4	74 JOINT SPALL	H	1.18 SLABS	1.00	Patching - PCC Partial Depth	36.40 SF	$84.50	$3,075.53
TE	4	75 CORNER SPALL	L	2.37 SLABS	1.67	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$46,140.04**
		Recommended Maintenance Projects:			**FY03**	**Overlay with 2" AC**	**Recommendation Cost**		**$1,000,000.00**
TE	4A	48 L & T CR	L	0.00 LF	0.91	No Policy Action	0.00	$0.00	$0.00
TE	4A	50 PATCHING	L	0.00 SF	24.42	No Policy Action	0.00	$0.00	$0.00
TE	4A	50 PATCHING	M	0.00 SF	9.51	Patching - AC Deep	4.00 SF	$3.80	$15.20
TE	4A	52 WEATH/RAVEL	L	0.00 SF	7.32	No Policy Action	0.00	$0.00	$0.00
TE	4A	52 WEATH/RAVEL	M	0.00 SF	6.17	Patching - AC Shallow	0.00 SF	$2.53	$0.00
					FY02		**Total Section Costs**		**$15.20**
		Recommended Maintenance Projects:			**FY03**	**Overlay with 2" AC**	**Recommendation Cost**		**$1,000,000.00**
TE	5	48 L & T CR	L	29 LF	0.13	No Policy Action	0.00	$0.00	$0.00
TE	5	50 PATCHING	L	1,695 SF	8.00	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$0.00**
		Recommended Maintenance Projects:				**None**	**Recommendation Cost**		**$0.00**
TG	1	48 L & T CR	L	19 LF	0.10	No Policy Action	0.00	$0.00	$0.00
TG	1	52 WEATH/RAVEL	L	697 SF	0.75	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$0.00**
		Recommended Maintenance Projects:				**None**	**Recommendation Cost**		**$0.00**
TG	2A	62 CORNER BREAK	L	2.10 SLABS	1.59	No Policy Action	0.00	$0.00	$0.00
TG	2A	63 LINEAR CR	L	4.19 SLABS	3.17	No Policy Action	0.00	$0.00	$0.00
TG	2A	65 JT SEAL DMG	M	132.00 SLABS	100.00	Joint Seal - Silicon	5,300.26 LF	$9.30	$49,292.41
TG	2A	74 JOINT SPALL	L	2.10 SLABS	1.59	No Policy Action	0.00	$0.00	$0.00
TG	2A	74 JOINT SPALL	M	4.19 SLABS	3.17	Patching - PCC Partial Depth	171.85 SF	$84.50	$14,521.61
TG	2A	75 CORNER SPALL	L	8.38 SLABS	6.35	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$63,814.01**
		Recommended Maintenance Projects:			**FY03**	**Joint Sealant/PCC Repairs**	**Recommendation Cost**		**$100,000.00**

Naval Station Keflavik - Maintenance and Repair Report

Branch	Section	Distress Type and Severity		Distress Quantity	% Distress	Policy Action	Work Quantity	Unit Cost	Total Defect Cost
TG	2B	41 ALLIGATOR CR	M	1,783.00 SF	4.00	Patching - AC Deep	1,956.96 SF	$3.80	$7,436.43
TG	2B	43 BLOCK CR	L	4,134.34 SF	9.27	No Policy Action	0.00	$0.00	$0.00
TG	2B	43 BLOCK CR	M	178.30 SF	0.40	Patching - AC Shallow	178.30 SF	$2.53	$451.10
TG	2B	45 DEPRESSION	L	111.44 SF	0.25	No Policy Action	0.00	$0.00	$0.00
TG	2B	48 L & T CR	L	1,672.01 LF	3.75	No Policy Action	0.00	$0.00	$0.00
TG	2B	48 L & T CR	M	289.81 LF	0.65	Crack Sealing - AC	289.83 LF	$4.30	$1,246.26
TG	2B	48 L & T CR	H	111.47 LF	0.25	Crack Sealing - AC	111.47 LF	$4.30	$479.33
TG	2B	50 PATCHING	L	6,909.14 SF	15.48	No Policy Action	0.00	$0.00	$0.00
TG	2B	52 WEATH/RAVEL	L	37,665.97 SF	84.41	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$9,613.13**
		Recommended Maintenance Projects:			**FY02**	**Resurface with 2"AC**	**Recommendation Cost**		**$100,000.00**
TH	1	48 L & T CR	L	293.71 LF	0.18	No Policy Action	0.00	$0.00	$0.00
TH	1	52 WEATH/RAVEL	L	10,120.18 SF	6.06	No Policy Action	0.00	$0.00	$0.00
TH	1	52 WEATH/RAVEL	M	133.47 SF	0.10	Patching - AC Shallow	133.47 SF	$2.53	$337.67
					FY02		**Total Section Costs**		**$337.67**
		Recommended Maintenance Projects:				**None**	**Recommendation Cost**		**$0.00**
TH	2	48 L & T CR	L	92 LF	0.10	No Policy Action	0.00	$0.00	$0.00
TH	2	52 WEATH/RAVEL	L	508 SF	0.33	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$0.00**
		Recommended Maintenance Projects:				**None**	**Recommendation Cost**		**$0.00**
TK	1	41 ALLIGATOR CR	L	57,981.89 SF	25.86	No Policy Action	0.00	$0.00	$0.00
TK	1	41 ALLIGATOR CR	M	2,488.49 SF	1.11	Patching - AC Deep	2,693.27 SF	$3.80	$10,234.43
TK	1	48 L & T CR	L	1,145.01 LF	0.51	No Policy Action	0.00	$0.00	$0.00
TK	1	48 L & T CR	M	49.78 LF	0.10	Crack Sealing - AC	49.79 LF	$4.30	$214.08
TK	1	50 PATCHING	L	1,119.82 SF	0.50	No Policy Action	0.00	$0.00	$0.00
TK	1	50 PATCHING	M	746.55 SF	0.33	Patching - AC Deep	860.52 SF	$3.80	$3,269.97
TK	1	52 WEATH/RAVEL	L	24.88 SF	0.10	No Policy Action	0.00	$0.00	$0.00
TK	1	52 WEATH/RAVEL	M	2,986.19 SF	1.33	Patching - AC Shallow	2,986.19 SF	$2.53	$7,555.07
					FY02		**Total Section Costs**		**$21,273.55**
		Recommended Maintenance Projects:			**FY02**	**Resurface with 2" AC**	**Recommendation Cost**		**$400,000.00**
TK	1A	41 ALLIGATOR CR	L	10,048 SF	6.99	No Policy Action	0.00	$0.00	$0.00
TK	1A	50 PATCHING	L	2,153 SF	1.50	No Policy Action	0.00	$0.00	$0.00
TK	1A	52 WEATH/RAVEL	L	48 SF	0.10	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$0.00**
		Recommended Maintenance Projects:				**None**	**Recommendation Cost**		**$0.00**
TK	2	48 L & T CR	L	49 LF	0.10	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$0.00**
		Recommended Maintenance Projects:				**None**	**Recommendation Cost**		**$0.00**

Naval Station Keflavik - Maintenance and Repair Report

Branch	Section	Distress Type and Severity		Distress Quantity	% Distress	Policy Action	Work Quantity	Unit Cost	Total Defect Cost
TK	3	41 ALLIGATOR CR	M	145,054.91 SF	28.47	Patching - AC Deep	146,591.70 SF	$3.80	$557,048.19
TK	3	45 DEPRESSION	M	4,241.37 SF	0.83	Patching - AC Deep	4,507.49 SF	$3.80	$17,128.47
TK	3	48 L & T CR	L	16,969.97 LF	3.33	No Policy Action	0.00	$0.00	$0.00
TK	3	48 L & T CR	M	31,394.45 LF	6.16	Crack Sealing - AC	31,395.98 LF	$4.30	$135,002.70
TK	3	50 PATCHING	L	8,482.74 SF	1.66	No Policy Action	0.00	$0.00	$0.00
TK	3	50 PATCHING	M	19,171.00 SF	3.76	Patching - AC Deep	19,732.27 SF	$3.80	$74,982.59
TK	3	50 PATCHING	H	19,679.96 SF	3.86	Patching - AC Deep	20,248.58 SF	$3.80	$76,944.57
TK	3	52 WEATH/RAVEL	L	432,365.44 SF	84.86	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$861,106.51**
		Recommended Maintenance Projects:			**FY02**	**Overlay with 2.5" AC**	**Recommendation Cost**		**$825,000.00**
TN	1	49 OIL SPILLAGE	L	24 SF	0.10	No Policy Action	0.00	$0.00	$0.00
TN	1	50 PATCHING	L	2,374 SF	2.40	No Policy Action	0.00	$0.00	$0.00
TN	1	52 WEATH/RAVEL	L	332 SF	0.34	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$0.00**
		Recommended Maintenance Projects:			**FY10**	**Overlay with 2" AC**	**Recommendation Cost**		**$800,000.00**
TN	1A	65 JT SEAL DMG	H	100.00 SLABS	100.00	Joint Seal - Silicon	3,225.16 LF	$9.30	$29,993.96
TN	1A	74 JOINT SPALL	L	23.00 SLABS	23.00	No Policy Action	0.00	$0.00	$0.00
TN	1A	75 CORNER SPALL	L	2.00 SLABS	2.00	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$29,993.96**
		Recommended Maintenance Projects:				**None**	**Recommendation Cost**		**$0.00**
TN	2	48 L & T CR	L	20 LF	0.10	No Policy Action	0.00	$0.00	$0.00
TN	2	52 WEATH/RAVEL	L	380 SF	0.25	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$0.00**
		Recommended Maintenance Projects:			**FY10**	**Overlay with 2" AC**	**Recommendation Cost**		**$800,000.00**
TN	3	41 ALLIGATOR CR	L	207.14 SF	0.12	No Policy Action	0.00	$0.00	$0.00
TN	3	52 WEATH/RAVEL	L	407.38 SF	0.24	No Policy Action	0.00	$0.00	$0.00
TN	3	52 WEATH/RAVEL	M	6.90 SF	0.10	Patching - AC Shallow	6.90 SF	$2.53	$17.47
					FY02		**Total Section Costs**		**$17.47**
		Recommended Maintenance Projects:			**FY10**	**Overlay with 2" AC**	**Recommendation Cost**		**$800,000.00**
TN	3A	65 JT SEAL DMG	M	100.00 SLABS	100.00	Joint Seal - Silicon	3,206.76 LF	$9.30	$29,822.86
					FY02		**Total Section Costs**		**$29,822.86**
		Recommended Maintenance Projects:				**None**	**Recommendation Cost**		**$0.00**
TN	5	41 ALLIGATOR CR	L	2,277.29 SF	0.79	No Policy Action	0.00	$0.00	$0.00
TN	5	41 ALLIGATOR CR	M	57.80 SF	0.10	Patching - AC Deep	92.40 SF	$3.80	$351.12
TN	5	48 L & T CR	L	1,798.03 LF	0.62	No Policy Action	0.00	$0.00	$0.00
TN	5	48 L & T CR	M	2,480.24 LF	0.86	Crack Sealing - AC	2,480.36 LF	$4.30	$10,665.56
TN	5	49 OIL SPILLAGE	L	312.12 SF	0.11	No Policy Action	0.00	$0.00	$0.00
TN	5	50 PATCHING	L	30,321.46 SF	10.48	No Policy Action	0.00	$0.00	$0.00
TN	5	50 PATCHING	H	115.60 SF	0.10	Patching - AC Deep	162.87 SF	$3.80	$618.92
TN	5	52 WEATH/RAVEL	L	8,664.10 SF	2.99	No Policy Action	0.00	$0.00	$0.00
TN	5	52 WEATH/RAVEL	M	3,115.38 SF	1.08	Patching - AC Shallow	3,115.37 SF	$2.53	$7,881.90
TN	5	52 WEATH/RAVEL	H	23.12 SF	0.10	Patching - AC Shallow	23.12 SF	$2.53	$58.49
					FY02		**Total Section Costs**		**$19,575.98**
		Recommended Maintenance Projects:			**FY03**	**Overlay with 2.5" AC**	**Recommendation Cost**		**$525,000.00**

Naval Station Keflavik - Maintenance and Repair Report

Branch	Section	Distress Type and Severity		Distress Quantity	% Distress	Policy Action	Work Quantity	Unit Cost	Total Defect Cost
TN	6	48 L & T CR	L	4 LF	0.10	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$0.00**
		Recommended Maintenance Projects:				**None**	**Recommendation Cost**		**$0.00**
TS	1	41 ALLIGATOR CR	L	535.64 SF	0.28	No Policy Action	0.00	$0.00	$0.00
TS	1	43 BLOCK CR	L	382.60 SF	0.20	No Policy Action	0.00	$0.00	$0.00
TS	1	46 JET BLAST	L	956.49 SF	0.50	No Policy Action	0.00	$0.00	$0.00
TS	1	48 L & T CR	L	1,289.69 LF	0.67	No Policy Action	0.00	$0.00	$0.00
TS	1	49 OIL SPILLAGE	L	1,101.88 SF	0.58	No Policy Action	0.00	$0.00	$0.00
TS	1	50 PATCHING	L	76.52 SF	0.10	No Policy Action	0.00	$0.00	$0.00
TS	1	52 WEATH/RAVEL	L	914.41 SF	0.48	No Policy Action	0.00	$0.00	$0.00
TS	1	52 WEATH/RAVEL	H	7.65 SF	0.10	Patching - AC Shallow	7.65 SF	$2.53	$19.36
					FY02		**Total Section Costs**		**$19.36**
		Recommended Maintenance Projects:				**None**	**Recommendation Cost**		**$0.00**
TS	2	46 JET BLAST	L	36 SF	0.10	No Policy Action	0.00	$0.00	$0.00
TS	2	48 L & T CR	L	164 LF	0.10	No Policy Action	0.00	$0.00	$0.00
TS	2	49 OIL SPILLAGE	L	334 SF	0.11	No Policy Action	0.00	$0.00	$0.00
TS	2	50 PATCHING	L	14,846 SF	4.88	No Policy Action	0.00	$0.00	$0.00
TS	2	52 WEATH/RAVEL	L	18,573 SF	6.10	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$0.00**
		Recommended Maintenance Projects:				**None**	**Recommendation Cost**		**$0.00**
TS	3	41 ALLIGATOR CR	L	1,370.00 SF	0.28	No Policy Action	0.00	$0.00	$0.00
TS	3	48 L & T CR	L	508.99 LF	0.10	No Policy Action	0.00	$0.00	$0.00
TS	3	49 OIL SPILLAGE	L	6,947.85 SF	1.42	No Policy Action	0.00	$0.00	$0.00
TS	3	50 PATCHING	L	6,223.71 SF	1.27	No Policy Action	0.00	$0.00	$0.00
TS	3	52 WEATH/RAVEL	L	21,450.27 SF	4.38	No Policy Action	0.00	$0.00	$0.00
TS	3	52 WEATH/RAVEL	M	117.43 SF	0.10	Patching - AC Shallow	117.43 SF	$2.53	$297.09
TS	3	53 RUTTING	L	978.57 SF	0.20	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$297.09**
		Recommended Maintenance Projects:				**None**	**Recommendation Cost**		**$0.00**
TS	4	48 L & T CR	L	195 LF	0.11	No Policy Action	0.00	$0.00	$0.00
TS	4	50 PATCHING	L	21,669 SF	12.75	No Policy Action	0.00	$0.00	$0.00
TS	4	52 WEATH/RAVEL	L	2,203 SF	1.30	No Policy Action	0.00	$0.00	$0.00
					FY02		**Total Section Costs**		**$0.00**
		Recommended Maintenance Projects:				**None**	**Recommendation Cost**		**$0.00**

Naval Station Keflavik - Maintenance and Repair Report

Branch	Section	Distress Type and Severity		Distress Quantity	% Distress	Policy Action	Work Quantity	Unit Cost	Total Defect Cost
WA	1	62 CORNER BREAK	L	6.28 SLABS	1.00	No Policy Action	0.00	$0.00	$0.00
WA	1	62 CORNER BREAK	M	3.14 SLABS	1.00	Patching - PCC Full Depth	101.32 SF	$49.30	$4,994.84
WA	1	63 LINEAR CR	L	69.03 SLABS	3.93	No Policy Action	0.00	$0.00	$0.00
WA	1	63 LINEAR CR	M	21.96 SLABS	1.25	Crack Sealing - PCC	481.00 LF	$6.75	$3,246.77
WA	1	65 JT SEAL DMG	L	439.25 SLABS	25.00	No Policy Action	0.00	$0.00	$0.00
WA	1	65 JT SEAL DMG	M	313.75 SLABS	17.86	Joint Seal - Silicon	13,445.45 LF	$9.30	$125,042.71
WA	1	65 JT SEAL DMG	H	1,004.00 SLABS	57.14	Joint Seal - Silicon	43,025.45 LF	$9.30	$400,136.66
WA	1	66 SMALL PATCH	L	288.65 SLABS	16.43	No Policy Action	0.00	$0.00	$0.00
WA	1	66 SMALL PATCH	M	9.41 SLABS	1.00	Patching - PCC Partial Depth	25.33 SF	$84.50	$2,140.28
WA	1	66 SMALL PATCH	H	3.14 SLABS	1.00	Patching - PCC Partial Depth	8.44 SF	$84.50	$713.43
WA	1	67 LARGE PATCH	L	138.05 SLABS	7.86	No Policy Action	0.00	$0.00	$0.00
WA	1	67 LARGE PATCH	M	3.14 SLABS	1.00	Patching - PCC Full Depth	338.15 SF	$49.30	$16,670.58
WA	1	67 LARGE PATCH	H	3.14 SLABS	1.00	Patching - PCC Full Depth	338.15 SF	$49.30	$16,670.58
WA	1	72 SHAT. SLAB	L	9.41 SLABS	1.00	No Policy Action	0.00	$0.00	$0.00
WA	1	74 JOINT SPALL	L	294.93 SLABS	16.79	No Policy Action	0.00	$0.00	$0.00
WA	1	74 JOINT SPALL	M	31.38 SLABS	1.79	Patching - PCC Partial Depth	1,127.15 SF	$84.50	$95,244.34
WA	1	74 JOINT SPALL	H	50.20 SLABS	2.86	Patching - PCC Partial Depth	1,803.44 SF	$84.50	$152,390.94
WA	1	75 CORNER SPALL	L	75.30 SLABS	4.29	No Policy Action	0.00	$0.00	$0.00
WA	1	75 CORNER SPALL	M	3.14 SLABS	1.00	Patching - PCC Partial Depth	8.44 SF	$84.50	$713.43
WA	1	75 CORNER SPALL	H	6.28 SLABS	1.00	Patching - PCC Partial Depth	16.89 SF	$84.50	$1,426.86
					FY02		**Total Section Costs**		**$819,391.40**
		Recommended Maintenance Projects:			**FY03**	**Joint Sealant/PCC Repairs**	**Recommendation Cost**		**$1,300,000.00**
WA	2	62 CORNER BREAK	L	7.20 SLABS	7.50	No Policy Action	0.00	$0.00	$0.00
WA	2	63 LINEAR CR	L	24.00 SLABS	25.00	No Policy Action	0.00	$0.00	$0.00
WA	2	63 LINEAR CR	M	3.60 SLABS	3.75	Crack Sealing - PCC	72.00 LF	$6.75	$486.02
WA	2	65 JT SEAL DMG	L	48.00 SLABS	50.00	No Policy Action	0.00	$0.00	$0.00
WA	2	65 JT SEAL DMG	H	48.00 SLABS	50.00	Joint Seal - Silicon	2,400.12 LF	$9.30	$22,321.09
WA	2	67 LARGE PATCH	L	2.40 SLABS	2.50	No Policy Action	0.00	$0.00	$0.00
WA	2	72 SHAT. SLAB	L	2.40 SLABS	2.50	No Policy Action	0.00	$0.00	$0.00
WA	2	72 SHAT. SLAB	H	1.20 SLABS	1.25	Slab Replacement - PCC	53.33 SY	$605.00	$32,266.94
WA	2	74 JOINT SPALL	L	18.00 SLABS	18.75	No Policy Action	0.00	$0.00	$0.00
WA	2	74 JOINT SPALL	M	3.60 SLABS	3.75	Patching - PCC Partial Depth	118.11 SF	$84.50	$9,980.30
WA	2	74 JOINT SPALL	H	1.20 SLABS	1.25	Patching - PCC Partial Depth	39.37 SF	$84.50	$3,326.77
WA	2	75 CORNER SPALL	L	14.40 SLABS	15.00	No Policy Action	0.00	$0.00	$0.00
WA	2	75 CORNER SPALL	M	1.20 SLABS	1.25	Patching - PCC Partial Depth	3.23 SF	$84.50	$272.86
WA	2	75 CORNER SPALL	H	1.20 SLABS	1.25	Patching - PCC Partial Depth	3.23 SF	$84.50	$272.86
					FY02		**Total Section Costs**		**$68,926.85**
		Recommended Maintenance Projects:			**FY03**	**Joint Sealant/PCC Repairs**	**Recommendation Cost**		**$1,300,000.00**
WA	3	63 LINEAR CR	L	1.40 SLABS	2.00	No Policy Action	0.00	$0.00	$0.00
WA	3	65 JT SEAL DMG	M	70.00 SLABS	100.00	Joint Seal - Silicon	0.00 LF	$9.30	$0.00
WA	3	74 JOINT SPALL	L	23.80 SLABS	34.00	No Policy Action	0.00	$0.00	$0.00
WA	3	74 JOINT SPALL	M	15.40 SLABS	22.00	Patching - PCC Partial Depth	505.25 SF	$84.50	$42,693.53
WA	3	74 JOINT SPALL	H	2.80 SLABS	4.00	Patching - PCC Partial Depth	91.86 SF	$84.50	$7,762.46
WA	3	75 CORNER SPALL	L	4.20 SLABS	6.00	No Policy Action	0.00	$0.00	$0.00
WA	3	75 CORNER SPALL	M	1.40 SLABS	2.00	Patching - PCC Partial Depth	3.77 SF	$84.50	$318.34
					FY02		**Total Section Costs**		**$50,774.33**
		Recommended Maintenance Projects:			**FY03**	**Joint Sealant/PCC Repairs**	**Recommendation Cost**		**$1,300,000.00**

Appendix A

Construction History

Section	Section from Surface to Subgrade		Constr.	Date Sealed
	Description	Thickness (in.)	Date	or Overlaid
R11-1A & 1B	Asphaltic Concrete (AC) Overlay	2		1993
	(CENTER 130')			
	Ralumac Micro-surface Slurry seal			1990
	Asphaltic Concrete (AC) Overlay	2		1985/86
	(varying thickness, 2.0" Min.)			
	Long. & Trans. Crack Repairs			1980/81
	(removed and replaced with varying			
	width AC patches)			
	Asphaltic Concrete (AC) Overlay	2		1973
	New Asphaltic Concrete Pavement	4	1952/53	
	GW/GP Material Basecourse	30.0-60.0		
	ML/MH Material Subgrade			
R11-2A & 2B	Asphaltic Concrete (AC) Overlay (CENTER	2		1993
	Ralumac Micro-surface Slurry Seal			1990
	Asphaltic Concrete (AC) Overlay	2		1986
	(varying thickness, 2.0" Min.)			
	Asphaltic Concrete (AC) Overlay	1.5		1973
	Asphaltic Concrete (AC) Overlay	3.5-8.5		1952
	GW/GP Material Basecourse	9.0-18.0		
	New Asphaltic Concrete Pavement	4	1948	
	GW/GP Material Basecourse	34		
	ML/MH Material Subgrade			
R11-3A & 3B	Asphaltic Concrete(AC) Resurfacing	2		1993
	(CENTER 130')			
	Ralumac Micro-surface Slurry Seal			1990
	Asphaltic Concrete (AC) Overlay	2		1983/1986
	(varying thickness, 2.0" Min.)			
	Sand Seal crack repairs			1982
	(on the most severe cracks)			
	Asphaltic Concrete (AC) Overlay	1.5		1973
	Asphaltic Concrete (AC) Overlay	4		1952
	GW/GP Material Basecourse	12.0-18.0		
	New Asphaltic Concrete Pavement	4	1942/43	
	GW/GP Material Basecourse			
	ML/MH Material Subgrade			
R11-5	Asphaltic Concrete (AC) Overlay	2		1992
	(CENTER 130')			
	Ralumac Micro-surface Slurry Seal			1990
	Asphaltic Concrete (AC) Overlay	2		1984
	(varying thickness, 2.0" Min.)			
	Asphaltic Concrete (AC) Overlay -			1981
	Removed AC Surface Course	5.5		
	Basecourse	6		
	Replaced w/ AC Wearing Course	2		
	AC Binder on Fabric	3		
	Basecourse	7		
	Asphaltic Concrete (AC) Overlay	1.5		1973
	Asphaltic Concrete (AC) Overlay	4		1952
	GW/GP Material Basecourse	6		
	New Asphaltic Concrete Pavement	4	1942/43	
	GW/GP Material Basecourse			
	ML/MH Material Subgrade			

Section	Section from Surface to Subgrade		Constr.	Date Sealed
	Description	Thickness (in.)	Date	or Overlaid
R11-5A	Asphaltic Concrete (AC) Overlay	2		1993/94
	(CENTER 130')			
	Ralumac Micro-surface Slurry Seal			1990
	Asphaltic Concrete (AC) Overlay	2		1984
	(varying thickness, 2.0" Min.)			
	Asphaltic Concrete (AC) Overlay			1981
	Removed AC Surface Course	5.5		
	Basecourse	6		
	Replaced w/ AC Wearing Course	2		
	AC Binder on Fabric	3		
	Basecourse	7		
	Asphaltic Concrete (AC) Overlay	1.5		1973
	Asphaltic Concrete (AC) Overlay	4		1952
	GW/GP Material Basecourse	6		
	New Asphaltic Concrete Pavement	4	1942/43	
	GW/GP Material Basecourse			
	ML/MH Material Subgrade			
R2-1A & 1B	Asphaltic Concrete (AC) Overlay	2		1994
	(CENTER 130')			
	Ralumac Micro-surface Slurry Seal			1990
	Asphaltic Concrete (AC) Overlay	2		1983/84
	(varying thickness, 2.0" Min.)			
	Long. & Trans. Crack Repairs			1980/81
	(removed and replaced with 2.0'			
	wide AC patches)			
	New Asphaltic Concrete Pavement	4	1973	
	Crushed Stone Basecourse	30		
	(varying thickness, up to 30.0")			
	ML/MH Material Subgrade			
R2-2A & 2B	Asphaltic Concrete (AC) Overlay	2		1994
	(CENTER 130')			
	Ralumac Micro-surface Slurry Seal			1990
	Asphaltic Concrete (AC) Overlay	2		1983/84
	(varying thickness, 2.0" Min.)			
	Sand Seal crack repairs			1982
	Asphaltic Concrete (AC) Overlay			
	GW/GP Material Basecourse			
	New Asphaltic Concrete Pavement	4	1973	
	GW/GP Material Basecourse	30		
	ML/MH Material Subgrade			
R2-2A1 & 2B1	Mill and Resurface (AC)	2		2000
	Asphaltic Concrete (AC) Overlay	2		1994
	(CENTER 130')			
	Ralumac Micro-surface Slurry Seal			1990
	Asphaltic Concrete (AC) Overlay	2		1983/84
	(varying thickness, 2.0" Min.)			
	Sand Seal crack repairs			1982
	GW/GP Material Basecourse			
	New Asphaltic Concrete Pavement			
	GW/GP Material Basecourse	4	1942/43	
	ML/MH Material Subgrade	34		
	(varying thickness, up to 30.0")			
	ML/MH Material Subgrade			

Section	Section from Surface to Subgrade		Constr.	Date Sealed
	Description	Thickness (in.)	Date	or Overlaid
R2-3A & 3B	Mill and Resurface (AC)	2		2000
	Asphaltic Concrete (AC) Overlay	2		1990
	Asphaltic Concrete (AC) Overlay	2		1983/84
	(varying thickness, 2.0" Min.)			
	Sand Seal crack repairs			1982
	Asphaltic Concrete (AC) Overlay	1.5		1973
	Asphaltic Concrete (AC) Overlay	4		
	GW/GP Material Basecourse	12.0-18.0		
	New Asphaltic Concrete Pavement	4	1942/43	
	GW/GP Material Basecourse	34		
	ML/MH Material Subgrade			
R7-1A & 1B	Asphaltic Concrete (AC) Overlay	2		1987
	(varying thickness, 2.0" Min.)			
	Asphaltic Concrete (AC) Overlay	4.0-5.75		1961
	GW/GP Material Basecourse	10.0-12.0		
	New Asphaltic Concrete Pavement	4	1942/43	
	GW/GP Material Basecourse	34		
	ML/MH Material Subgrade			
R7-2A & 2B	Asphaltic Concrete (AC) Overlay	2		1987
	(varying thickness, 2.0" Min.)			
	Sand Seal crack repairs			1982
	(on the most severe cracks)			
	Asphaltic Concrete (AC) Overlay	4		1952
	GW/GP Material Basecourse	12.0-18.0		
	New Asphaltic Concrete Pavement	4	1942/43	
	GW/GP Material Basecourse	34		
	ML/MH Material Subgrade			
TS-1	Asphaltic Concrete (AC) Overlay	2		1989
	Asphaltic Concrete (AC) Pavement	4	1953	
	GW/GP Material Basecourse	29.0-38.0		
	ML/MH Material Subgrade			
TS-2	Asphaltic Concrete (AC) Overlay	2.0-4.0		1988
	Asphaltic Concrete (AC) Pavement	4.5-8.0		1961
	New Asphaltic Concrete Pavement	3.5-4.5	1953/54	
	GW/GP Material Basecourse	30.0-66.0		
	ML/MH Material Subgrade			
TS-3, TS-4, TN-1 & TN-2	Asphaltic Concrete (AC) Overlay	2		1994
	Asphaltic Concrete (AC) Pavement	2.0-4.0		1987
	New Asphaltic Concrete Pavement	3.25-4.25	1952/53	
	GW/GP Material Basecourse	32.0-54.0		
	ML/MH Material Subgrade			

Section	Section from Surface to Subgrade		Constr.	Date Sealed
	Description	Thickness (in.)	Date	or Overlaid
TN-3	Asphaltic Concrete (AC) Overlay	2		1994
	Alligator Cracking repairs			1988
	(removed and replaced AC)			
	Asphaltic Concrete (AC) Overlay	2		1986
	(2.0" minimum thickness)			
	New Asphaltic Concrete Pavement	4	1953	
	GW/GP Material Basecourse	29.0-38.0		
	ML/MH Material Subgrade			
TN-5	Asphaltic Concrete (AC) Pavement	6	1986	
	3.0" Wearing Course			
	3.0" Binder Course			
	Stabilized Aggregate Basecourse	5		
	1.5" Max. size Aggregate Subbase	6		
	6.0" Max. size Stapafel Pit Run	24		
	ML/MH Material Subgrade			
TN-6 & NCA-2	Asphaltic Concrete (AC) Pavement	6	1990	
	Stabilized Aggregate Basecourse	5		
	1.5" Max. size Aggregate Subbase	6		
	6.0" Max. size Stapafel Pit Run	24		
	ML/MH Material Subgrade			
NCA-1	Portland Cement Concrete (PCC)	13	1990	
	Stabilized Aggregate Basecourse	6		
	1.5" Max. size			
	Stapafel Pit Run Subbase	22		
	6.0" Max. size			
	ML/MH Material Subgrade			
TK-3	Longitudinal Cracks Sealed			1986
	Defective Pavement Repair			1986
	New Asphaltic Concrete Pavement	3.5-4.5	1952/54	
	GW/GP Material Basecourse	30.0-60.0		
	ML/MH Material Subgrade			
TK-2	Asphaltic Concrete (AC) Overlay	2		1986
	(varying thickness, 2.0" Min.)			
	New Asphaltic Concrete Pavement	3.5-4.5	1952/54	
	GW/GP Material Basecourse	30.0-60.0		
	ML/MH Material Subgrade			
TK-1	Asphaltic Concrete (AC) Overlay	3.5		1952
	GW/GP Material Basecourse	12.0-18.0		
	New Asphaltic Concrete Pavement	4	1942/43	
	GW/GP Material Basecourse	34		
	ML/MH Material Subgrade			

Section	Section from Surface to Subgrade		Constr.	Date Sealed
	Description	Thickness (in.)	Date	or Overlaid
TE-1, TE-3 & DA-	Asphaltic Concrete (AC) Overlay	3		1994
	(Removed & Replaced)			
	Asphaltic Concrete Wearing Course	3	1991	
	Asphaltic Concrete Binder Course	3		
	Aggregate Basecourse (1.5" max.)	12		
	Aggregate Subbase (6.0" max.)	24		
	Compacted Subgrade/common fill			
TE-2, TE-4	Portland Cement Concrete (PCC) (non-reinforced)	13	1991	
	Aggregate Basecourse (1.5" max.)	5		
	Aggregate Subbase (6.0" max.)	22		
	GW/GP Material Basecourse	32.0-54.0		
	ML/MH Material Subgrade			
TE-5	Asphaltic Concrete (AC) Overlay	2		1987
	Asphaltic Concrete Wearing Course	3.25-4.25	1952/53	
	GW/GP Material Basecourse	32.0-54.0		
	ML/MH Material Subgrade			
HA11-1, HA20-1, HA25-1, HA29-1 & HCA-2, TG-2B	Asphaltic Concrete (AC) Overlay	4		?
	Portland Cement Concrete (PCC)	10	1953/54	
	GW/GP Material Basecourse	32.0-54.0		
	ML/MH Material Subgrade			
TD-1, TD-2, DHS1/9-2	Asphaltic Concrete (AC) Pavement	4	1983	
	2.0" Wearing Course			
	2.0" Binder Course			
	1.5" Max. size Aggregate Basecourse	6		
	6.0" Max. size Aggregate Subbase	24		
	ML/MH Material Subgrade			
DHS1/9-1	Portland Cement Concrete (PCC)	9	1983	
	Bituminous Base (two lifts)	6		
	1.5" Max. size Aggregate Basecourse	4		
	6.0" Max. size Aggregate Subbase	17		
	ML/MH Material Subgrade			
HCA-1	Portland Cement Concrete (PCC)	14	1955	
	GW/GP Material Basecourse	28.0-30.0		
	ML/MH Material Subgrade			

Section	Section from Surface to Subgrade		Constr.	Date Sealed
	Description	Thickness (in.)	Date	or Overlaid
TG-1 & TG-2A	Asphaltic Concrete (AC) Overlay	2.0-4.0		1987
	Asphaltic Concrete (AC) Pavement	3.25-4.25	1955	
	GW/GP Material Basecourse	32.0-54.0		
	ML/MH Material Subgrade			
TA-1	Asphaltic Concrete (AC) Overlay	2		1989
	Asphaltic Concrete leveling Course	2		
	Asphaltic Concrete (AC) Pavement	4	1953	
	GW/GP Material Basecourse	30.0-60.0		
	ML/MH Material Subgrade			
AHA-1	Repair Joint and Corner Spalls			1995
	Portland Cement Concrete (PCC)	10	1953/54	
	GW/GP Material Basecourse	18		
	ML/MH Material Subgrade			
AHA-2 & AHA-3	Asphaltic Concrete (AC) Overlay	2		1995
	(PARTIAL OVERLAY)			
	Asphaltic Concrete (AC) Pavement	4	1953	
	GW/GP Material Basecourse	30.0-60.0		
	ML/MH Material Subgrade			
TH-1 & TH-2	Asphaltic Concrete (AC) Overlay	2		1993
	Asphaltic Concrete Wearing Course	2	1985/87	
	Asphaltic Concrete Binder Course	2		
	Crusher Run Basecourse (1.5” Max.)	8		
	Pit Run Stapafel (6.0” Max.)	varies		
	ML/MH Material Subgrade			
PSA1/14-1	Portland Cement Concrete (PCC)	11	1985/87	
	Aggregate Basecourse (1.5” max.)	8.0-15.0		
	Pit Run Stapafel (6.0” Max.)	20.0-60.0		
	ML/MH Material Subgrade			
KHS1/11-1	Portland Cement Concrete (PCC)	14	1953/54	
	GW/GP Material Basecourse	38		
	ML/MH Material Subgrade			
KHS1/11-2	Asphaltic Concrete (AC) Pavement	3.5-4.5	1953/54	
	GW/GP Material Basecourse	30.0-60.0		
	ML/MH Material Subgrade			
CTA-1	Reconstructed. Construction info was not available at the time of the survey.		2000	
CTA-1A	Reconstructed. Construction info was not available at the time of the survey.		2000	

Section	Section from Surface to Subgrade		Constr.	Date Sealed
	Description	Thickness (in.)	Date	or Overlaid
CTA-1C	Reconstructed. Construction info was not available at the time of the survey.		2000	
CTA-2	Portland Cement Concrete (PCC)	13	1986	
	1.5” Max. size Aggregate Basecourse	6		
	6.0” Max. size Aggregate Subbase	22		
	ML/MH Material Subgrade			
CTA-1B	Asphaltic Concrete Wearing Course	3	1986	
	Asphaltic Concrete Binder Course	3		
	Stabilized Aggregate Basecourse	5		
	1.5” Max. size Aggregate Basecourse	6		
	6.0” Max. size Stapafel Pit Run	24		
	ML/MH Material Subgrade			
CTA-3	Reconstructed. Construction info was not available at the time of the survey.		2000	
TC-2	Asphaltic Concrete (AC) Pavement	4	1942	
	GW/GP Material Basecourse	28.0-46.0		
	ML/MH Material Subgrade			
TC-3	Asphaltic Concrete (AC) Overlay	7		1986
	3.0” Wearing Course			
	4.0” Binder Course			
	Asphaltic Concrete (AC) Pavement		1942	
	60’ CENTER			
	AC Wearing Course	4		
	GW/GP Material Basecourse	28.0-46.0		
	ML/MH Material Subgrade			
	20’ EDGES			
	Bituminous Basecourse	4		
	1.5” Max. size Agg. Basecourse	4		
	Salvaged Aggregate Subbase	24		
	ML/MH Material Subgrade			
AAE-1	Asphaltic Concrete Wearing Course	2		1990
	Asphaltic Concrete leveling Course	2.0-2.5		
	Asphaltic Concrete Wearing Course	4	1942/43	
	GW/GP Material Basecourse	28.0-46.0		
	ML/MH Material Subgrade			
AAE-2	Portland Cement Concrete (PCC)	11	1990	
	Mill Crushed Bituminous Concrete	4		
	Stapafel Pit Run (6.0” Max.)	21		
	Compacted Subgrade			

Section	Section from Surface to Subgrade		Constr.	Date Sealed
	Description	Thickness (in.)	Date	or Overlaid
KAT-1, OA-1 & MHA-1	Repair Joint and Corner Spalls			1978
	Cleaned and Resealed Joints			1978
	Portland Cement Concrete (PCC)	14	1953/54	
	GW/GP Material Basecourse	38		
	ML/MH Material Subgrade			
WA-1	Repair Joint and Corner Spalls			1978
	Cleaned and Resealed Joints			1978
	Portland Cement Concrete (PCC)	12.5	1953/55	
	GW/GP Material Basecourse	24.0-32.0		
	ML/MH Material Subgrade			
WA-2 & WA-3	Portland Cement Concrete (PCC)	11	1980	
	GW/GP Material Basecourse			
	ML/MH Material Subgrade			
KAT-2	Asphaltic Concrete (AC) Overlay	2		1994
	Mill Bituminous Concrete	2		1994
	Removed Alligator Cracked Pavement	3.5-4.5		1986
	Replace With:			
	Asph. Conc.(AC) wearing course	2	1986	
	Bitu. Binder course on Fabric	3		
	GW/GP Material Basecourse	32.0-42.0	1954/55	
	ML/MH Material Subgrade			
KA-1 & KA-1A	Asphaltic Concrete (AC) Overlay	2		1986
	Asphaltic Concrete (AC) Overlay	3		1956
	Asphaltic Concrete (AC) Pavement	1.5	1954	
	GW/GP Material Basecourse	32.0-40.0		
	ML/MH Material Subgrade			
KA-2	Asphaltic Concrete (AC) Overlay	3		1956
	Asphaltic Concrete (AC) Pavement	1.5	1954	
	GW/GP Material Basecourse	32.0-40.0		
	ML/MH Material Subgrade			
OA-3	Portland Cement Concrete (PCC)	9	1979	
	Asphaltic Concrete (AC) Basecourse	4		
	GW/GP Mat. Basecourse (1.5” Max.)	6		
	GW/GP Material Subbase (6” Max.)	6		
OA-2	Portland Cement Concrete (PCC)	11	1991	
	GW/GP Mat. Basecourse (1.5” Max.)	6		
	GW/GP Material Subbase (6” Max.)	13		
PSA1/14-2	Asphaltic Concrete (AC) Pavement	2	1993	
	SW/SP Material Basecourse	4		
	GW/GP Material Subbase (6” Max.)	28		

Appendix B

Flight Operations Data

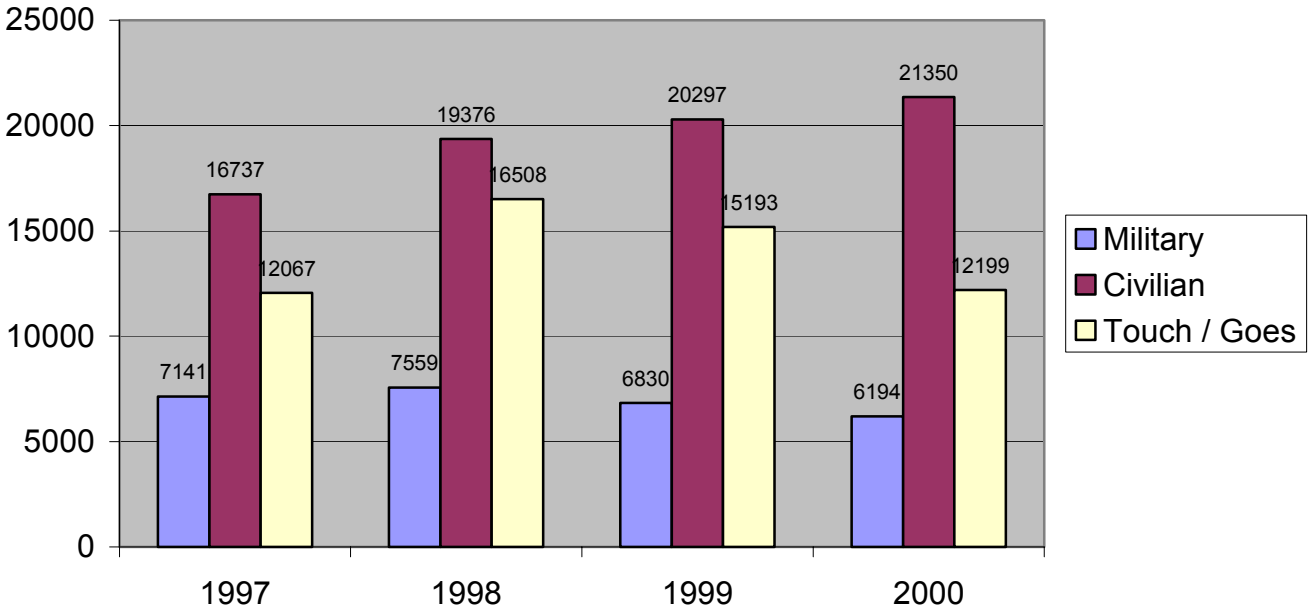


Illustration 7. Civilian and Military Movements at NAS Keflavik.

Approximate runway usage:
45% Runway 11-29
55% Runway 02-20

Table 5. Annual Movements by Aircraft Type in 2000

Aircraft	Passes	Aircraft	Passes
B-707	25	P-3	1004
B-727	319	C-141	196
B-737	4494	C-130	955
B-747	569	C-160	340
B-757	10879	C-17	45
B-767	18	C-5	54
B-777	2	DC-3	2
DC-8	270	ATLANTIC	42
DC-9/MD-80	188	NIMROD	42
DC-10	34	KC-10	30
TRISTAR	303	KC-135	392
AIRBUS	852	E-3	55
IL-76	28	E-2	4
ANTONOV	100	VC-10	16
CONCORDE	2	JAGUAR	8
BA-146	2	TORNADO	34
BAC-1-11	4	F-15	1896
TUPOLEV	2	F-16	28
LIGHT A/C ALL	4055	F-22	2
(Lear Jet/F-27/Cessna/ Piper etc.)		MIG-29	26

Appendix C

Climatological Data

CLIMATOLOGICAL DATA SUMMARY

Naval Air Station, Keflavik, Iceland

PERIOD OF RECORD: (HOURLY): 1945-1995

	TEMPERATURE			PRECIPITATION (INCHES) (^)							WIND (KNOTS)			MEAN NO. OF DAYS WITH (&)								
	MEANS			PRECIP.			24H	SNOWFALL (@)		24H	PREVAIL		MAX	PRECIP. INCHES		SNOWFALL INCHES		FOG	TEMP (DEG F)			
	MAX	MIN	AVG	MEAN	MAX	MIN	MAX	MEAN	MAX	MAX	DIR	SPD	GUST	>=	>=	>=	>=	*	MAX >=	MAX >=	MIN <=	MIN <=
														0.01	0.50	0.10	1.50		90	65	32	5
JAN	30	11	21	3.8	10.8	0.5	2.8	19	54	17	NNW	9	52	11	3	7	4	14	0	0	30	10
FEB	33	13	23	3.5	7.3	0.1	3.0	17	49	16	NNW	9	59	10	2	6	3	12	0	0	26	8
MAR	41	24	33	4.1	10.9	0.8	3.4	14	44	16	NNW	10	53	11	3	5	3	15	0	#	25	1
APR	52	35	44	4.0	8.9	1.1	3.3	3	14	11	S	8	50	12	2	1	1	16	0	3	12	0
MAY	63	44	54	3.7	8.8	0.5	2.8	T	6	4	S	8	45	12	2	#	#	18	#	13	1	0
JUN	73	53	63	3.3	6.7	0.7	2.8	0	0	0	S	7	68	11	2	0	0	20	1	25	0	0
JUL	78	59	69	3.0	7.9	0.6	3.2	0	0	0	SSW	8	56	10	2	0	0	21	1	30	0	0
AUG	77	58	68	3.2	9.8	0.5	5.8	0	0	0	SSW	7	63	9	2	0	0	21	1	30	0	0
SEP	69	50	60	3.3	11.6	0.6	8.0	T	T	T	SSW	8	63	10	2	0	0	20	#	21	#	0
OCT	58	40	49	3.8	8.6	1.0	2.9	T	4	4	SSW	8	49	10	2	#	#	19	0	7	7	0
NOV	47	31	39	5.1	14.3	1.2	3.4	3	14	14	N	6	54	12	3	2	1	17	0	1	18	#
DEC	35	18	26	4.5	10.0	1.1	3.7	16	62	21	N	7	52	11	3	6	3	14	0	#	28	5
ANN	**55**	**36**	**46**	**45.2**	**67.4**	**28.6**	**8.0**	**71**	**153**	**21**	**SSW**	**8**	**68**	**129**	**28**	**27**	**15**	**207**	**3**	**129**	**147**	**24**
POR	45	45	45	45	45	45	45	45	45	45	46	46	42	45	45	45	45	37	45	45	45	45

T = TRACE AMOUNTS (< 0.05 < 0.5 INCHES)
# = MEAN NO. DAYS < 0.5 DAYS
@ = NAVY STATIONS REPORT HAIL AS SNOWFALL, ALSO NWS FROM JULY 1948 - DEC. 1955
& = ANN TOTALS MAY NOT EQUAL SUM OF MONTHLY VALUES DUE TO ROUNDING
^ = 24 HR MAX PRECIP AND SNOWFALL ARE DAILY TOTALS (MID-NIGHT TO MID-NIGHT)
POR/YOR = PERIOD/YEAR OF RECORD

Appendix D

1996 NAS Keflavik Load Evaluation Report

Preface

The investigation reported herein was authorized by the Naval Facilities Engineering Command, Atlantic Division, Norfolk, Virginia, in NAVCOMPT Form 2275, Reference No. N0002595RA62470, dated 9 March 1995. The Technical Proponent is the Naval Facilities Engineering Command, Atlantic Division, Norfolk, Virginia. This report provides an assessment of load-carrying capacity of airfield pavements at NAS Keflavik, Iceland.

This publication was prepared by the U.S. Army Engineer Waterways Experiment Station (WES) based upon pavement structural testing and analysis work at NAS Keflavik, on 15 through 26 July 1996. The team consisted of Messrs. Patrick S. McCaffrey, Jr. and Jeb S. Tingle, Airfields and Pavements Division (APD), Geotechnical Laboratory (GL). The report was prepared by Mr. Patrick S. McCaffrey, Jr., under the supervision of Dr. Albert J. Bush III, Chief, Technology Applications Branch, APD, Dr. Raymond Rollings, Acting-Chief, APD, and Dr. William F. Marcuson III, Director, GL, WES.

At the time of publication of this report, Director of WES was Dr. Robert W. Whalin. Commander was COL Bruce K. Howard, EN.

Executive Summary

The field testing at NAS Keflavik, Iceland was conducted in July 1996 by the U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS. The structural capacity and physical properties of the pavement were determined from nondestructive teats using a heavy weight deflectometer measurements taken in previous studies at selected locations on the airfield, and dynamic cone penetrometer (DCP) tests.

The results of the tests and visual inspection reveal the following:

a. The airfield pavement facilities and the feature designation are shown in Illustrations 1 and 2, respectively. The PCN values to be forwarded for publication in the DOD Flight Information Publication Enroute (FLIP) IFR-Supplement and the five standard Navy aircraft categories are shown in Illustrations 3, 4, 5, 6, 7, and 8, respectively. Illustrations 4 through 8 are to be used as a guide for the airfield manager for day-to-day operations.

b. The PCI, ACN/PCN and recommended required maintenance for each pavement feature are shown in Table ES-l, the Airfield Pavement Evaluation General Summary. The PCI listed in the table are the results of the 1996 pavement condition survey performed by the Naval Facilities Engineering Command, Norfolk, Virginia. The PCN values were determined by the load evaluation. Results of the load evaluation and PCI survey should be evaluated concurrently in order to determine both the optimum time to apply required maintenance and perform the required strengthening of the pavement.

c. All airfield features are structurally adequate to support day-to-day mission requirements (peacetime use) for the next 10 years, except for features TC-2, TK-1, TK-1A, TK-3, AHA-1, AHA-2, CTA-1C, HA 1 l-l, HA20- 1 and KHS l-2 through KHS 11-2. It is recommended that strengthening the pavement be performed at that time when the PCI values are predicted to fall below acceptable levels in order that maximum pavement life per dollar invested be obtained. Overlay requirements for features AHA-2, TC-3, TE-2, TE-4, TE-5, TK-2, HA-29, KA-1 and PSA1-2 through PSA14-2 are less than 2-in., and these pavements are in very good to excellent condition. Overlays to these pavements can be delayed without significant damage to the

pavement; however these pavements should be inspected in 4-years to reassess their condition. For pavements requiring greater than 2-in. of overlay the projected traffic volume and loading should be verified by the station prior to using these overlay thickness values as more than a planning guide. For sections AI-IA-1 and KHS1-2 through KHS11-2 the anticipated traffic may be substantially less than that used in analyzing the pavement. Note that the pavements requiring structural improvement (overlays) can perform for the next 10 years without an overlay if aircraft allowable gross loads do not exceed that value derived from the pavement PCN using the ACN-PCN curves.

d. In planning structural improvements and/or reconstruction requirements, it should be recognized that Military Handbook 1021/2 (Department of Defense 1973) specifies that Portland Cement Concrete or composite pavements with a rigid overlay be used in numerous airfield pavement areas, such as ends of all runways, primary taxiways, and primary parking aprons.

e. Overloading the pavement facilities may shorten the life expectancy.

Conversion Factors, Non-SI to SI Units of Measurement

Non-SI units of measurement used in this report can be converted to SI units as follows:

Multiply	By	To Obtain
Fahrenheit degree	5/9	Celsius degree or Kelvins[1]
Feet	0.3048	meters
inches	2.54	centimeters
kips (force)	4.448222	kilonewtons
kips (force) per inch	175.1288	kilonewtons per meter
miles (U.S. statute)	1.809347	kilometers
pounds (force)	4.448222	newtons
pounds (mass)	0.4535924	kilograms
pounds (force) per square inch	6894.757	pascals
pounds (mass) per cubic foot	16.01846	kilograms per cubic meter
pounds (mass) per cubic inch	27.6799	grams per cubic centimeter
square feet	0.09290304	square meters
square inches	6.4516	square centimeters
square yards	0.8361274	square meters
tons (2,000 pound, mass)	907.1847	kilograms

[1] To obtain Celsius (C) temperature readings from Fahrenheit (F) readings, use the following formula: C = (5/9) (F-32). To obtain Kelvin (K) readings, use: K = (5/9) (F-32) + 273.15.

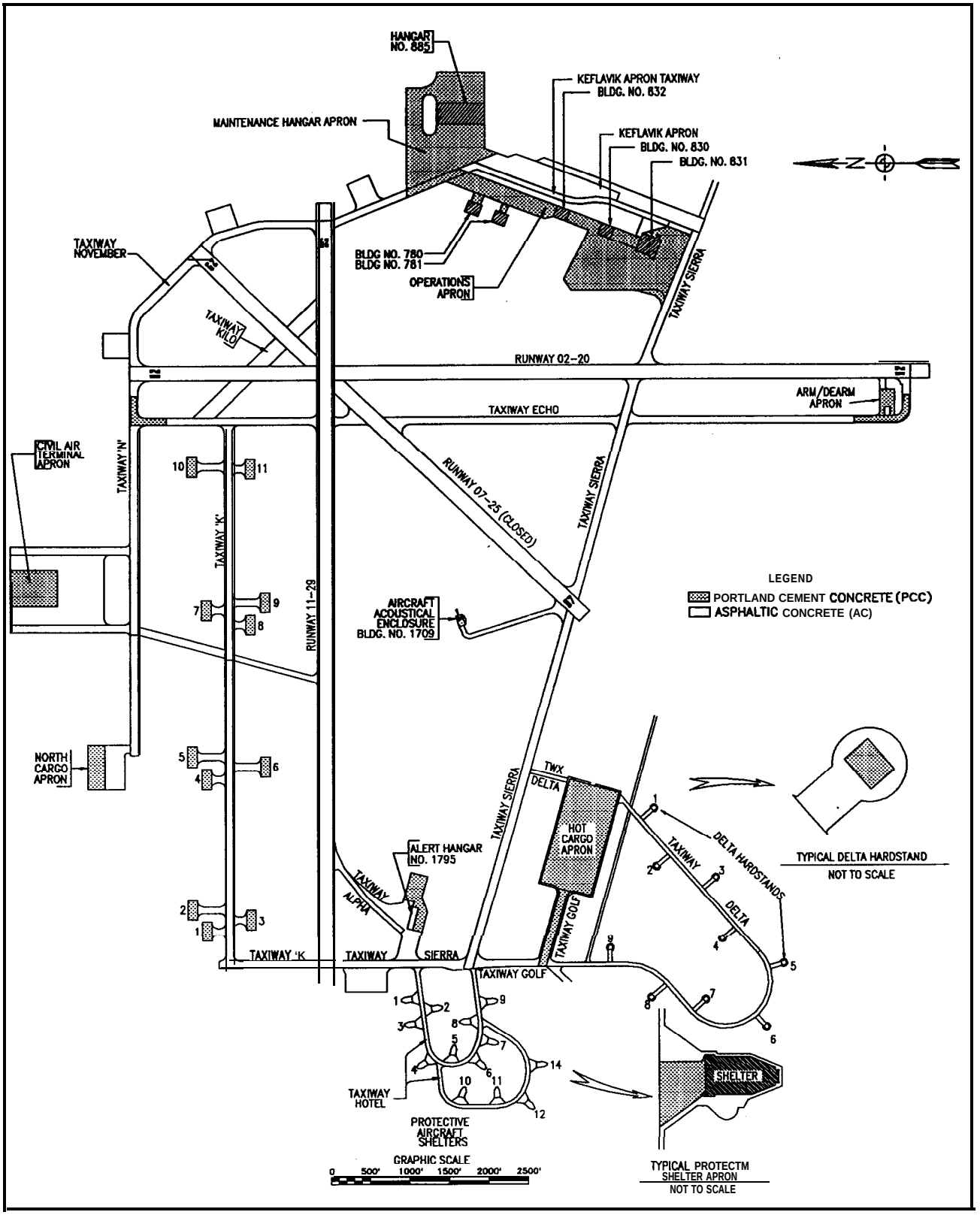


Illustration 1. Airfield layout and facility identification

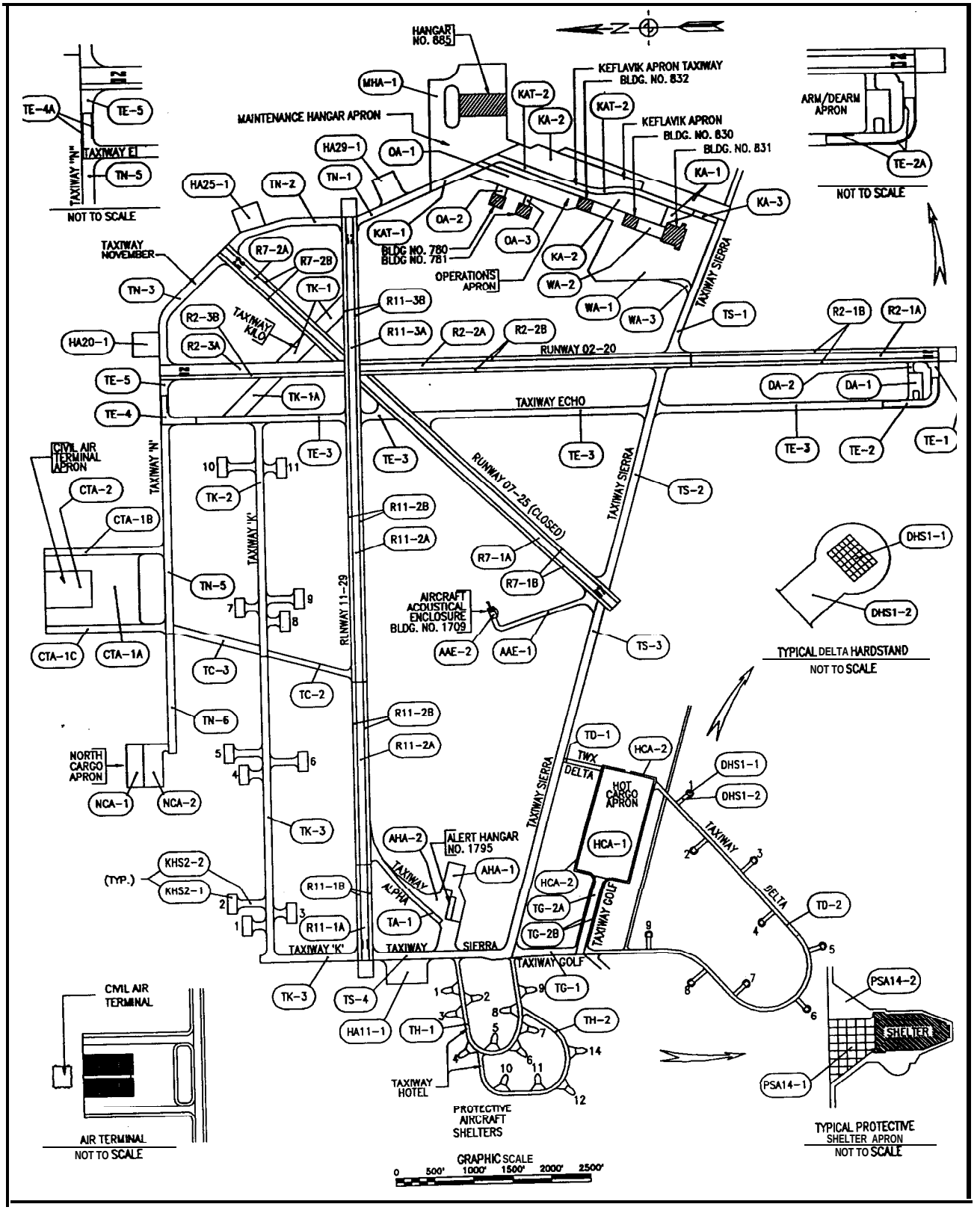


Illustration 2. Pavement feature identification and location

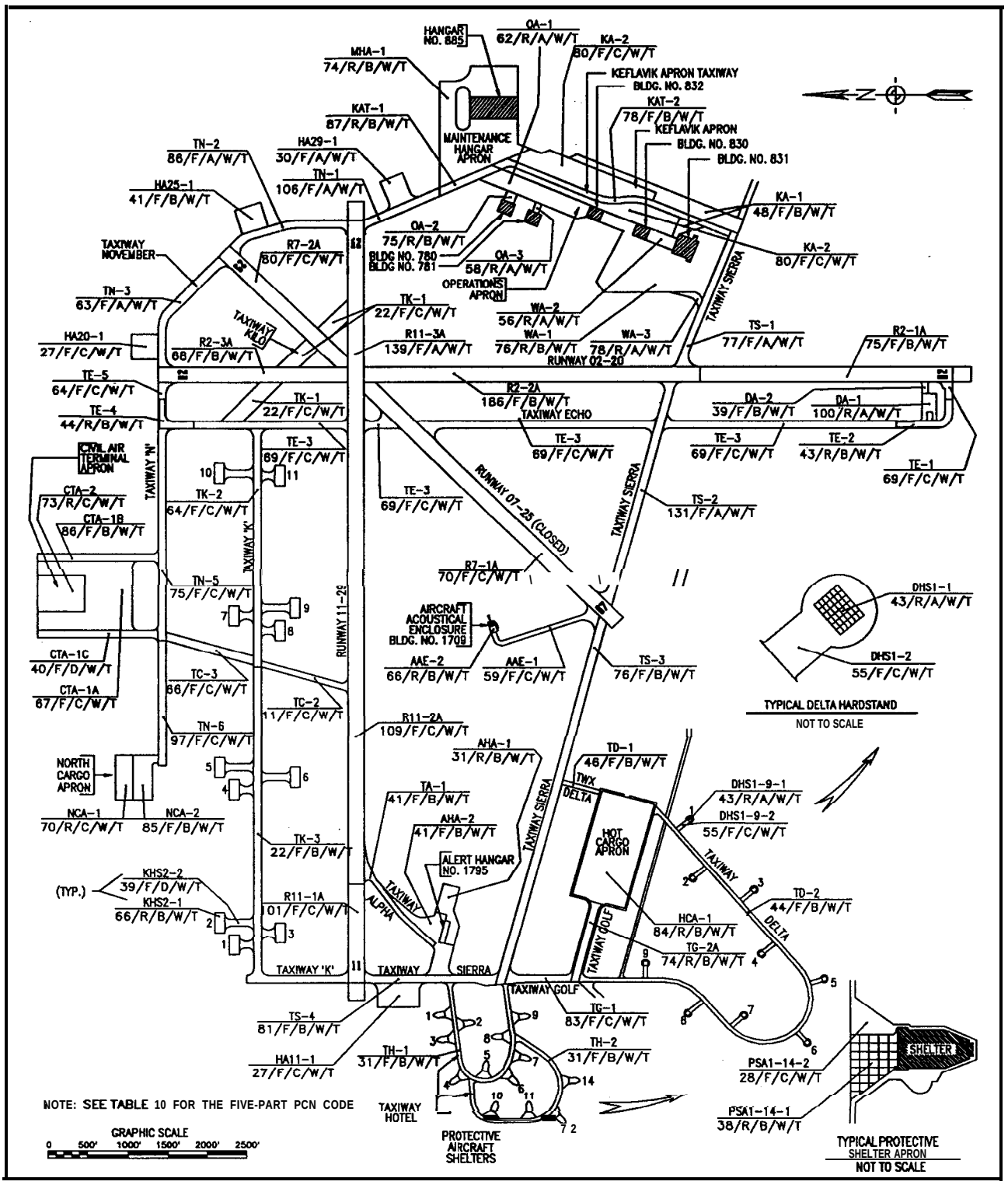


illustration 3. Airfield pavement evaluation chart (APEC) reported in DOD Flight Information Publication Enroute (FLIP) IFR-Supplement

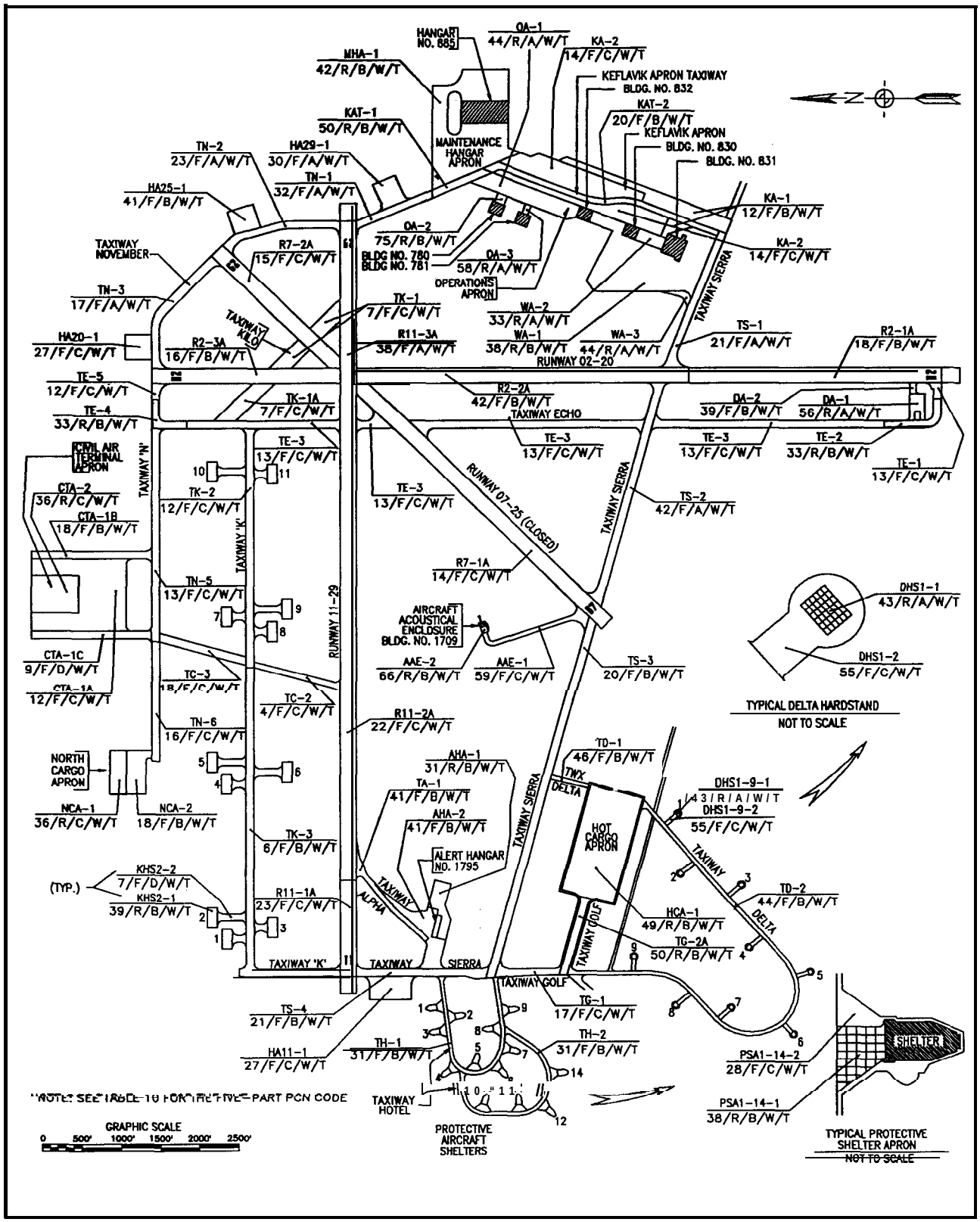


Illustration 4. Airfield pavement evaluation chart, single gear (F-14)

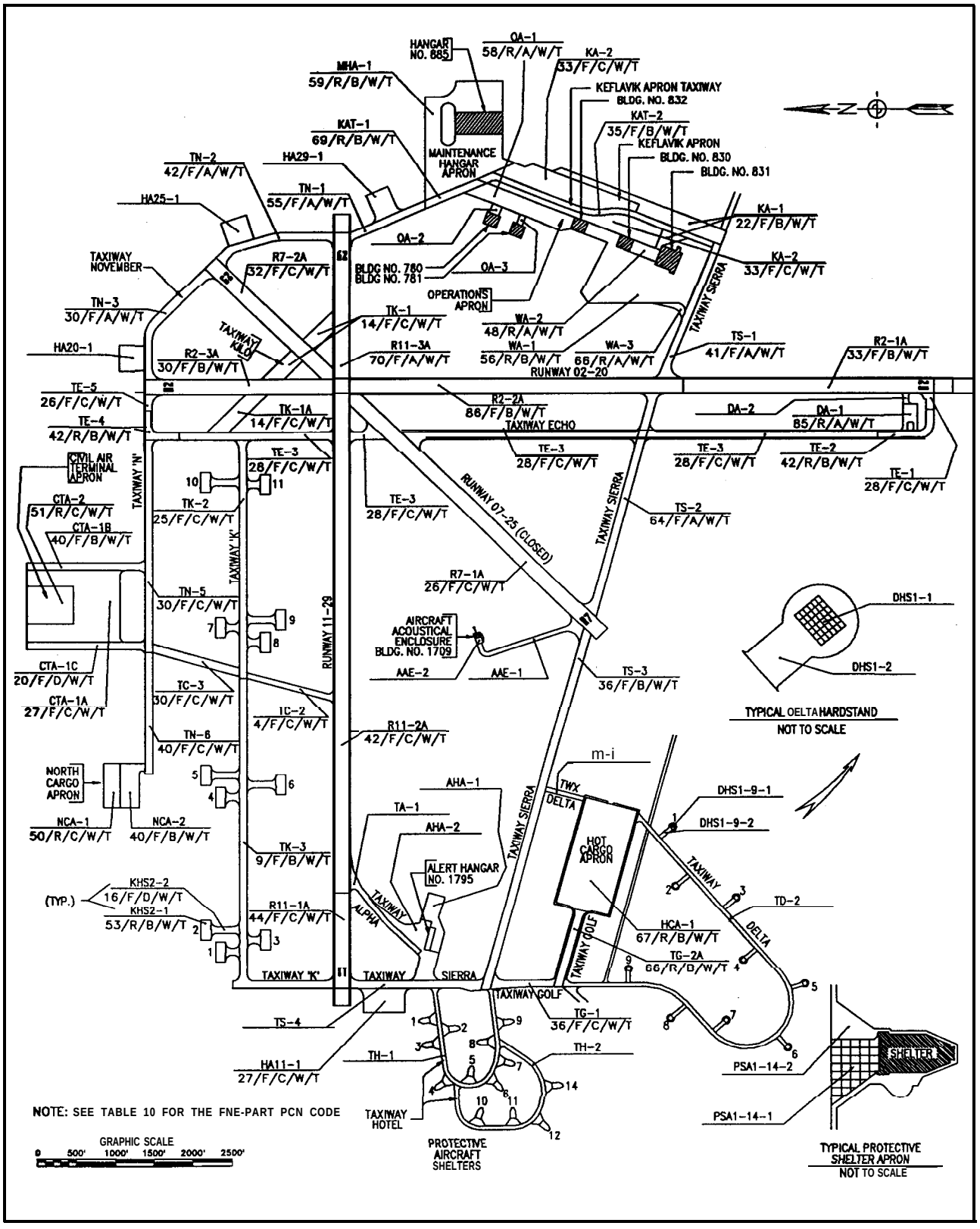


Illustration 5. Airfield pavement evaluation chart, dual gear (P-3)

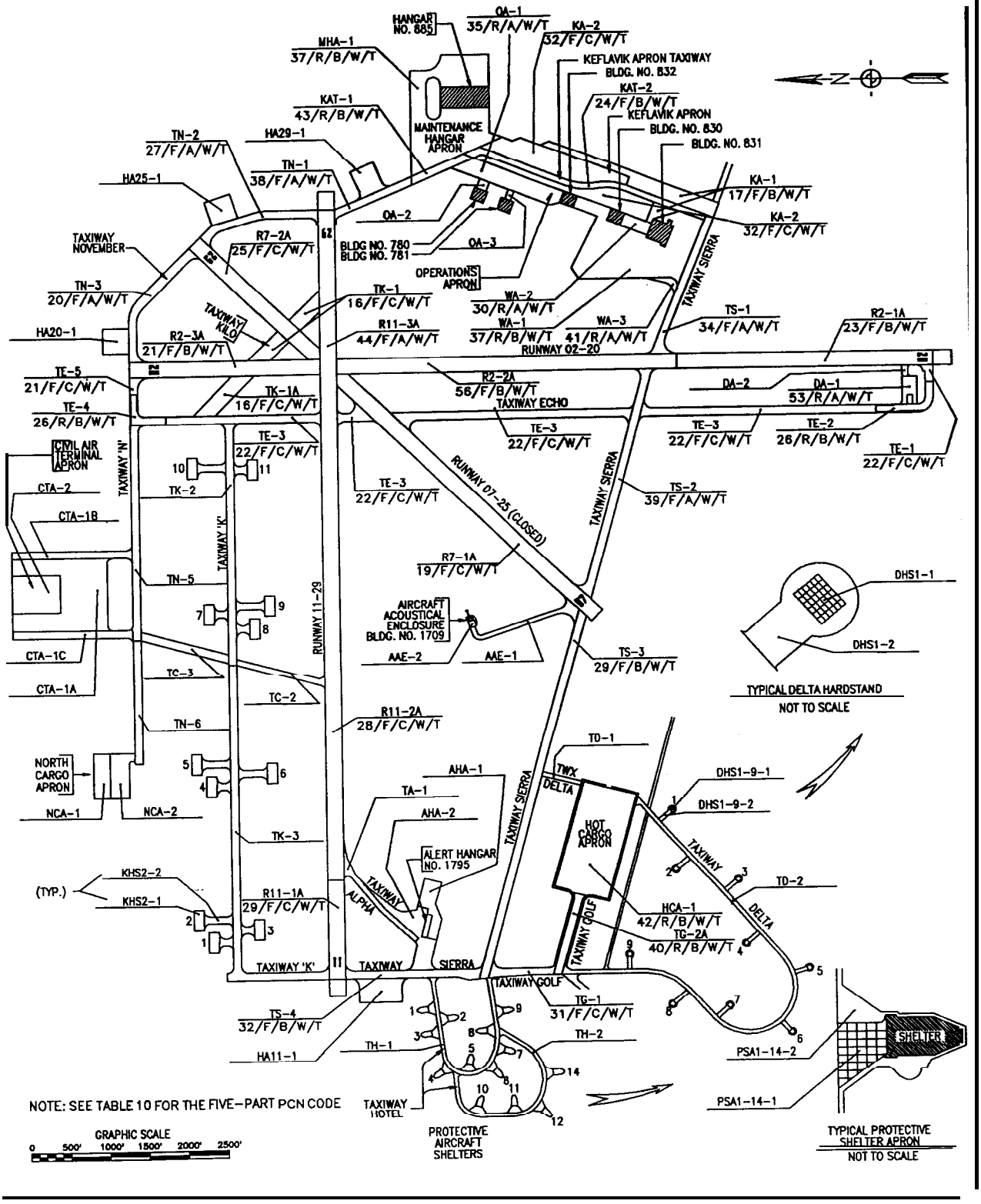


Illustration 6. Airfield pavement evaluation chart, single tandem (C-130)

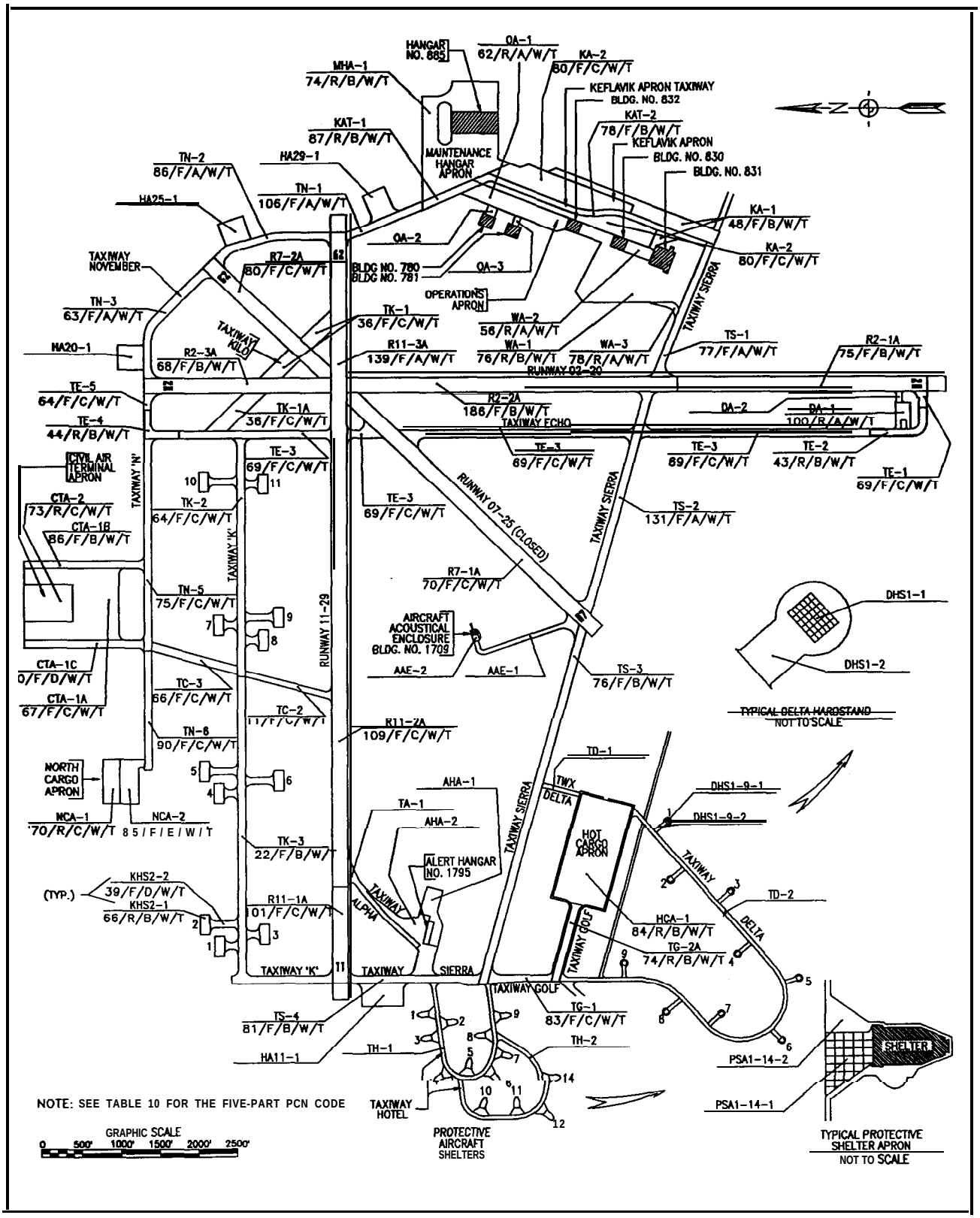


Illustration 7. Airfield pavement evaluation chart, dual tandem (C-1 41)

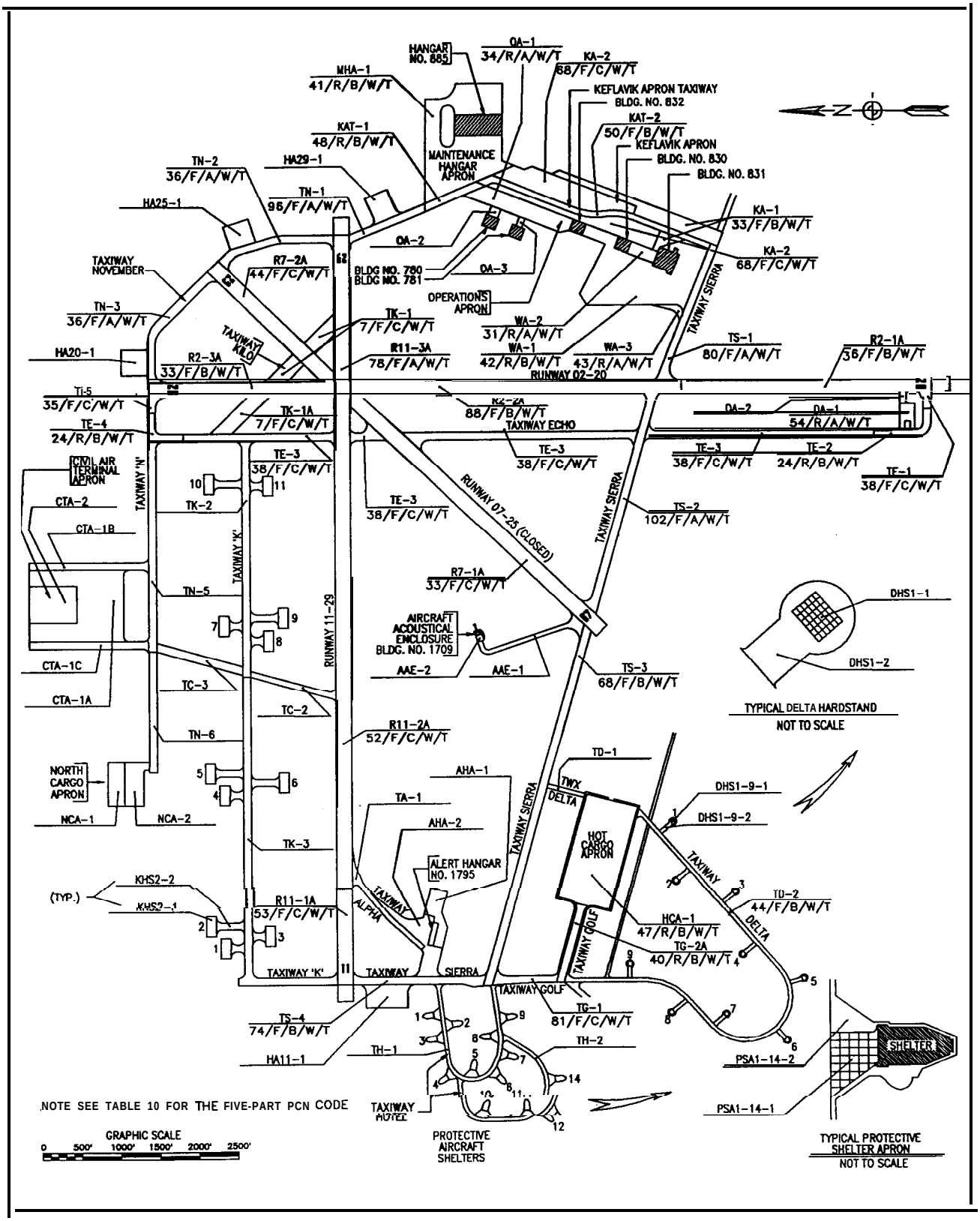


illustration 8. Airfield pavement evaluation chart, twin delta tandem (C-5A)

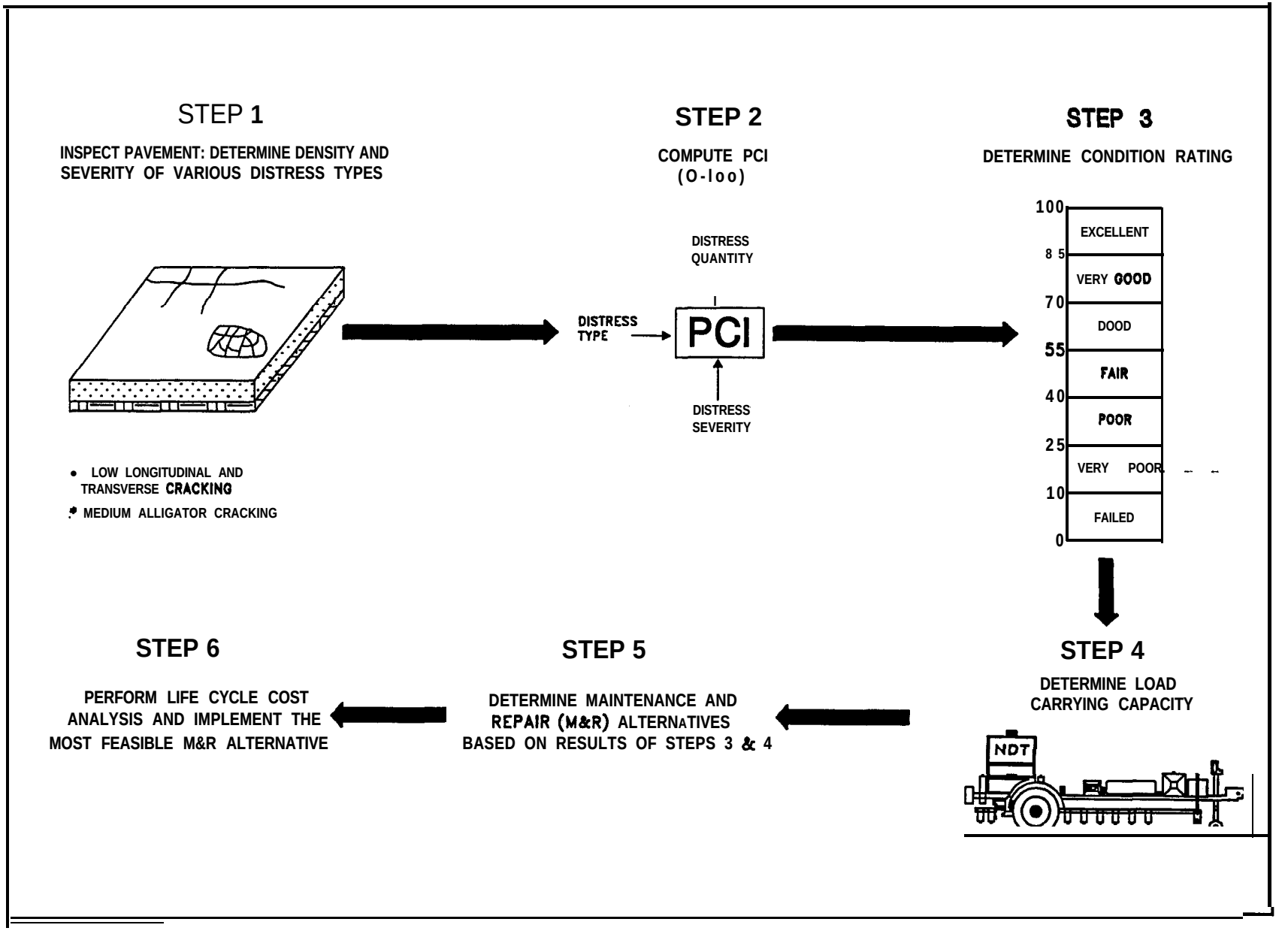


Illustration 9. Flowchart for determination of maintenance and repair recommendations

Table ES-1
Airfield Pavement Evaluation General Summary[1]

Pavement Feature	PCI	PCN	ACN/ PCN[3]	Recommendations		
				Routine Maintenance[4]	Repair	
					Major Maintenance[5]	Structural Improvement (Overlay)[6]
R11-1A	94	101/F/C/W/T	0.65	X		
R11-2A	90	109/F/C/W/T	0.61	X		
R11-3A	93	139/F/A/W/T	0.34	X		
R2-1A	95	75/F/B/W/T	0.72	X		
R2-2A	90	186/F/B/W/T	0.29	X		
R2-3A	91	68/F/B/W/T	0.78	X		
R7-1A	97	70/F/C/W/T	0.94	X		
R7-2A	98	80/F/C/W/T	0.83	X		
AAE-1	91	59/F/C/W/T	0.53	X		
KAT-1	67	69/R/B/W/T	0.65	X		
KAT-2	97	78/F/B/W/T	0.69	X		
TA-1	99	41/F/B/W/T	0.76	X		
TC-2	6	11/F/C/W/T	6.00			X
TC-3	75	66/F/B/W/T	1.00			X[7]
TD-1	97	46/F/B/W/T	0.67	X		
TD-2	99	44/F/B/W/T	0.70	X		
TE-1	71	69/F/C/W/T	0.96	X		
TE-2	91	42/R/B/W/T	1.07			X[7]
TE-3	92	69/F/C/W/T	0.96	X		
TE-4	91	42/R/B/W/T	1.07			X[7]
TE-5	65	64/F/C/W/T	1.03			X[7]

(Sheet 1 of 3)

1 Work is categorized for preliminary planning purposes only.
2 Table 10 describes the components of the PCN code.
3 Determined for design aircraft. See Table 9.
4 Routine maintenance project required to maintain PCI above current Navy criteria (>70 for runways and >60 for aprons and taxiways).
5 Major maintenance project required to maintain PCI above current Navy criteria (>70 for runways and >60 for aprons and taxiways).
6 Required structural improvements are based on a NDT evaluation (ACN/PCN >1.0) and is presented in terms of overlay thickness. See Table 9.
7 Overlay requirements for these features are less than the minimum requirements. Since the PCI is very good to excellent these overlays could be delayed without significant damage to the pavement. These pavements should be re-evaluated in about 5 years to reassess the need for overlay.

Table ES-1l (Continued)

Pavement Feature	PCI	PCN	ACN/ PCN[3]	Recommendations		
				Routine Maintenance[4]	Repair: Major Maintenance[5]	Repair: Structural Improvement (Overlay)[6]
TG-1	100	83/F/C/W/T	0.65	X		
TG-2A	85	66/R/B/W/T	0.68	X		
TH-1	93	31/F/B/W/T	1.00	X		
TH-2	98	31/F/B/W/T	1.00	X		
TK-1	55	36/F/C/W/T	1.83			X
TK-1A	100	36/F/C/W/T	1.83			X[7]
TK-2	100	64/F/C/W/T	1.03			X[7]
TK-3	39	22/F/B/W/T	2.45			X
TN-I	100	106/F/A/W/T	0.44	X		
TN-2	100	86/F/A/W/T	0.55	X		
TN-3	100	63/F/A/W/T	0.75	X		
TN-5	40	75/F/C/W/T	0.88	X		
TN-6	89	97/F/C/W/T	0.68	X		
rs-1	92	77/F/A/W/T	0.61	X		
rs-2	99	131/F/A/W/T	0.36	X		
rs-3	91	76/F/B/W/T	0.71	X		
rs-4	92	81/F/B/W/T	0.58	X		
AAE-2	93	66/R/B/W/T	0.50	X		
AHA-1	57	31/R/C/W/T	1.06			X
AHA-2	66	28/F/B/W/T	1.11			X[7]
CTA-1 A	82	67/F/C/W/T	0.99	X		
CTA-1B	68	86/F/B/W/T	1.00		X	
CTA-1 C	58	40/F/D/W/T	2.00			X
CTA-2	85	51/R/C/W/T	0.92	X		
DA-1	93	85/R/A/W/T	0.49	X		
IA-2	95	39/F/B/W/T	0.79	X		

(Sheet 2 of 3)

Overlay requirements for these features are less than the minimum requirements. Since the PCI is very good to excellent these overlays could be delayed without significant damage to the pavement. These pavements should be re-evaluated in about 5 years to reassess the need for overlay.

Table ES-1 (Concluded)

Pavement Feature	PCI	PCN	ACN/ PCN[3]	Recommendations		
					Repair	
				Routine Maintenance[4]	Major Maintenance[5]	Structural Improvement (Overlay)[6]
DHS1-9-1	92	43/R/A/W/T	0.76	X		
DHS1-9-2	86	55/F/C/W/T	0.56	X		
HA11-1	42	27/F/C/W/T	1.15			X[7]
HA20-1	62	27/F/C/W/T	1.15			X[7]
HA25-1	69	41/F/B/W/T	0.76	X		
HA29-1	65	30/F/A/W/T	0.68			X[7]
HCA-1	88	67/R/B/W/T	0.67	X		
KA-1	69	48/F/B/W/T	1.13			X[7]
KA-2	83	80/F/C/W/T	0.83	X		
KHS1-11-1	74	53/R/B/W/T	0.85	X		
KHS1-11-2	80	39/F/D/W/T	2.05			X
MHA-1	75	59/R/B/W/T	0.76	X		
NCA-1	98	50/R/C/W/T	0.94	X		
NCA-2	75	85/F/B/W/T	0.63	X		
OA-1	82	58/R/A/W/T	0.72	X		
OA-2	98	75/R/B/W/T	0.44	X		
OA-3	81	58/R/A/W/T	0.56	X		
PSA1-14-1	85	38/R/B/W/T	0.86	X		
PSA1-14-2	100	28/F/C/W/T	1.18			X[7]
WA-1	73	56/R/B/W/T	0.80	X		
WA-2	68	48/R/A/W/T	0.87		X	
WA-3	68	66/R/A/W/T	0.64		X	

(Sheet 3 of 3)

[7] Overlay requirements for these features are less than the minimum requirements. Since the PCI is very good to excellent these overlays could be delayed without significant damage to the pavement. These pavements should be re-evaluated in about 5 years to reassess the need for overlay.

1 Introduction

Background

In July 1996 Naval Facilities Engineering Command, Atlantic Division, Norfolk, Virginia, requested an pavement evaluation at NAS Keflavik, Iceland. The evaluation of the airfield pavements was performed to determine the structural adequacy of the existing pavements to accommodate mission aircraft and to identify maintenance, repair, and repair work requirements.

Objective and Scope

The primary objectives of this investigation were to determine the design traffic; the allowable aircraft loads; and to identify maintenance, repair, and structural improvement needs for each airfield pavement feature. These objectives were accomplished by:

a. Obtaining records of day-to-day traffic operations from the station Airfield Operations Department and discussions with Air Operations personnel.

b. Conducting a structural evaluation of the airfield pavements in accordance with TM 5-826-1/AFJMAN 32-1036/DM 21.7 (Headquarters, Departments of the Army, the Air Force, and the Navy Draft) using the nondestructive testing device and DCP test results.

The results of this study can be used to:

a. Provide preliminary engineering data for pavement design.

b. Determine type and gross weights of aircraft that can operate on a given airfield feature without causing structural damage or shortening the life of the pavement structure.

c. Determine aircraft operational constraints as a function of pavement strength and surface condition.

d. Determine the need for structural improvements to sustain current levels of aircraft operations.

e. Determine the need for structural improvements to accommodate increased use of the airfield (e.g., to accommodate mobilization outloading or new aircraft mission).

This report gives a general description of the airfield, its construction history, the condition of the existing pavements, traffic data, ACN values for the five-standard Navy aircraft categories (categories are determined by landing gear type/geometry), PCN values for the pavement features, and overlay requirements based on the controlling aircraft for each feature. PCN values and overlay requirements were determined based upon projected traffic for the next 10 years.

2 Background Data

Description of the Airfield

NAS Keflavik is located about 3 miles from the town of Keflavik in the southwestern part of Iceland. The airfield is approximately 25 miles west of Rekjavik, the principle city and capital of Iceland. NAS Keflavik serves as the International Airport for Iceland commercial traffic and is also the home base for Icelandair. The airfield is located on a plateau-like surface built up by volcanic activity and subsequently modified by glaciation and stream activity.

In July 1996 the airfield consisted of two active runways, one inactive runway, connecting taxiways, 4 warm-up aprons, 13 protective shelters, 21 hardstands, 4 military aprons, and 2 civilian aprons. A layout of the airfield is shown in Illustration 1, and pavement feature identifications and locations are shown in Illustration 2. Table 2 presents a summary of construction history data.

The climatology data used herein were obtained from NAS Keflavik Operations. The data obtained is shown in Table 1 and is based on a cumulative history dating back to 1949. The highest and lowest average monthly temperatures were 51 and 32 °F occurring in July and January, respectively. The annual rainfall is 47.8 in. and the annual snowfall is 79 in.

Previous Reports

Pertinent data for this airfield were extracted from previous pavement evaluation reports for use in this report:

a. U.S. Navy, Atlantic Division, Naval Facilities Engineering Command. (1996). "Runway Friction Measurements and Airfield Pavement Condition Index, PCI, Naval Air Station, Keflavik, Iceland," Norfolk, VA.

b. U.S. Army Engineer District, Eastern Ocean. (1961). "Airfield Evaluation Report, Keflavik Airport Iceland, " New York, NY.

c. U.S. Army Engineer District, Eastern Ocean. (1957). "Airfield Pavement Evaluation Report, Rigid Pavements 1953 and 1954 Construction Season, Keflavik Airport, Keflavik, Iceland," New York, NY.

d. U.S. Army Engineer District, Eastern Ocean. (1955). "Airfield Pavement Evaluation Report, Taxiway G and East-West Runway Extension, Keflavik Airport, Keflavik, Iceland," New York, NY.

e. U.S. Army Engineer Waterways Experiment Station. (1952). "Limited Reconnaissance For Pavement Evaluation and Soil Type-Airphoto Ties, Report No. 1, Keflavik and Patterson Airfields Iceland, " Vicksburg, MS.

Pavement Condition Survey

A pavement condition survey is a visual inspection of the airfield pavements to determine the present surface condition. The condition survey consists of inspecting the pavement surface for the various types of distresses, determining the severity of each distress, and measuring the quantity of each distress. The condition survey provides estimated quantities of each distress type and severity with the PCI for each feature. The PCI is a numerical indicator based on a scale from 0 to 100 and is determined by measuring pavement surface distress that reflects the surface condition of the pavement. Pavement condition ratings (from excellent to failed) are assigned to different levels of PCI values. For airfield pavements used by jet aircraft Navy criteria specifies that PCI values shall exceed 70 for runways; 60 for aprons and taxiways; and 50 for other pavements. Preventative or routine maintenance (such as small amounts of concrete repairs, joint sealant replacement, isolated patching, or crack sealing, etc.) should be done on pavements at or above the minimum PCI value. Major repair projects should be initiated for pavements below the minimum PCI value. If foreign object damage (FOD) potential exist due to pavement defects, corrective action is required regardless of the PCI value.

The results of a pavement condition survey are given in the 1996 report prepared by Atlantic Division, Naval Facilities Engineering Command, Norfolk, VA. The distress types, distress severities, methods of survey, and PCI calculation are described in ASTM D 5340-93. Recommendations to apply maintenance or repair to improve existing PCI values based upon the condition survey are in the 1996 report.

Traffic History

NAS Keflavik is utilized as both a civilian airport and military base at the present time. Complete traffic records were obtained from NAS Keflavik Operations for the period January 1 through December 1995 and were used for traffic analysis.

ACN-PCN Method of Reporting Pavement Load-Carrying Capacity

The load-carrying capacity is a function of the strength of the pavement, the weight of the aircraft, and the number of applications of the load. A standardized method of reporting pavement strength was developed by the International Civil Aviation Organization (ICAO). This procedure is known as the "Aircraft Classification Number over Pavement Classification Number" (ACN/PCN method).

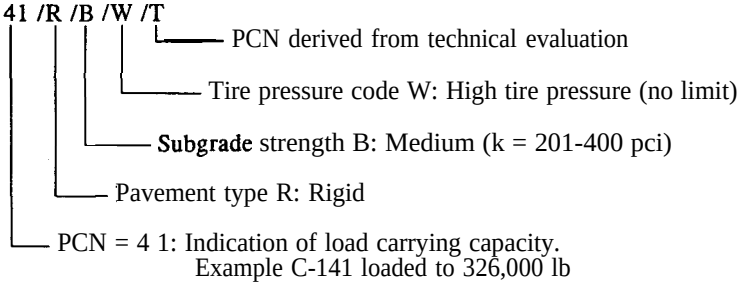
The ACN is used to express the effect of individual aircraft on different pavements by a single unique number which varies according to pavement type and subgrade strength without specifying a particular pavement thickness. Conversely, the PCN of a pavement can be expressed by a single unique number without specifying a particular aircraft. The ACN and PCN are defined as follows:

a. ACN is a number which expresses the relative structural effect of an aircraft on both flexible and rigid pavements for specific standard subgrade strengths in terms of a standard single wheel load.

b. PCN is a number which expresses the relative load carrying capacity of a pavement for a given pavement life in terms of a standard single wheel load.

The ratio of a particular Aircraft ACN to a particular Pavement PCN (ACN/PCN ratio), is indicative of the load-carrying ability of that particular pavement to accommodate that particular aircraft. For a given pavement life and a number of operations for a particular aircraft, there is a relationship between the ACN/PCN ratio and the percent of pavement life used up by the applied traffic. For a given ACN/PCN ratio, a relationship exists for the number of operations that will produce failure of the pavement. This relationship provides a method for evaluating a pavement for allowable load depending on acceptable degree of damage to the pavement or an allowable number of operations of a particular aircraft to cause failure of a pavement. Table 10 presents a description of the letter codes comprising the PCN code.

An example of a PCN five part code is as follows:



The system works by comparing the ACN to the PCN, as follows:

a. If the ACN/PCN is equal to 1.0, the predicted failure life of the pavement would equal the life of the pavement used for analysis, i.e the pavement would perform satisfactorily for the analysis period.

b. If the ACN/PCN is less than 1.0, the pavement will perform satisfactorily, and the pavement life would be greater than that used for the analysis.

c. If the ACN is greater than 1.0, the pavement will be overloaded and the pavement life would be less than that used for the analysis. The analysis period used for evaluating pavement is typically 10 years.

There are situations when Airfield Air Operations might decide that it would be acceptable to overload a pavement slightly. Pavements can usually support some overload, with an significant reduction in pavement life. However, this reduction may be substantial if the overload is large. If the operational ACN is greater than the PCN, and a decrease in pavement life is not acceptable, then some structural improvement is required to increase the pavement PCN value such that it equals or exceeds the ACN value.

3 Test and Analysis

Test Conducted

The pavements were evaluated based on test results from (a) nondestructive testing (NDT) using a heavy falling weight deflectometer (HWD), (b) dynamic cone penetrometer (DCP) test at selected locations, and (c) thickness and material classification data from previous studies. The test procedures are discussed below.

Nondestructive Tests

Test equipment

NDT tests were performed on the pavement with the Dynatest model 8081 HWD. The HWD is an impact load device that applies a single-impulse transient load of approximately 25 to 30 millisecond duration. With this trailer mounted device, a dynamic force is applied to the pavement surface by dropping a weight onto a set of rubber cushions which results in an impulse loading on an underlying circular plate 17.9 in. in diameter in contact with the pavement. The applied force and the pavement deflections are measured with a load cell and velocity transducers, respectively. The drop of the weights can be varied from 0 to approximately 15.7 in to produce a force from 9,000 to 60,000 lbs. The system is controlled with a microcomputer which also records output data. Velocities are measured and deflections computed at the center of the load plate (D1) and at distances of 15, 24, 36, 48, 60, and 72 in. (D2-D7) from the center of the load plate in order to obtain the deflection basin.

Test procedure

On runways and taxiways, deflection basin measurements were made at 100 ft intervals on alternating sides of the centerline along the main gear wheel paths. For flexible pavements, the tests were performed on a 10 to 12 ft offset from the centerline. For rigid pavements, the tests were conducted at the center of the slab or the largest unbroken piece. The parking apron, warm-up aprons, hardstands, and protective shelters were tested in a

grid pattern of approximately 100 ft intervals or at locations that were selected to ensure that adequate NDT were performed per feature for evaluation purposes. Lines along which the NDT were conducted or locations tested (specified by number) on each pavement facility are indicated in Figure 1. At each test location pavement deflection measurements were recorded at force levels of 25,000, 35,000, 45,000 and 60,000 lb. Impact stiffness modulus (ISM) values were then calculated based on the slope (load/deflection) of the plot of impulse load versus the deflection at the first sensor (D1) for the maximum force level.

NDT Analysis

The ISM values for each pavement feature were analyzed and grouped according to differences in magnitude of the ISM values. Groups within a feature are called sections. Visual evaluation of the ISM data indicated that only one section per feature was needed. Figures 2 through 28 show graphically the ISM test results. A representative basin for each feature was determined using the computer program Layered Elastic Evaluation Program (LEEP). Table 3 shows the representative basins for each feature as determined from the NDT.

Representative basins were used to determine section modulus values of the various layers within the pavement structure in each section. Deflection basins were input to a layered elastic multi-layered backcalculation program to determine the surface, base, and subgrade modulus values. The program determines a set of modulus values which provides the best fit between a measured deflection basin (NDT) and a computed (theoretical) deflection basin. Table 5 presents a summary of the backcalculated modulus values based on the representative basins for each pavement section.

Modulus values for AC pavements can be determined using three methods: (a) use the surface temperature at the time of testing and the previous 5 day mean air temperature, (b) backcalculated the modulus values using the HWD deflection basins, or (c) determine the design modulus from past temperature data. In this evaluation, pavements are evaluated for a design life of 10 years. All three methods are described in TM 5-826-U AFJMAN 32-1036/DM 21.7 (Headquarters, Departments of the Army, the Air Force, and the Navy Draft). Modulus of AC is temperature dependent; therefore the seasonal variation in temperature is accounted for by using the design modulus from past temperature data. From the climatological table (Table 1), an average daily maximum temperature of 75°F and an average daily mean of 51 °F were used in determining the design AC modulus. At a frequency level of 10 Hz for the runways, the design AC modulus was 590,347 psi. At a frequency level of 2 Hz for the taxiways and. aprons, the design AC modulus was 387,482 psi. The design AC modulus along with the backcalculated values for the base, subbase, and subgrade layers were used to determine the structural capacity of the AC pavement features.

Modulus values for PCC pavements can be backcalculated using the FWD deflection basins or a design modulus for the PCC can be used. In the evaluation of a rigid pavement, the design modulus should be used for the PCC layer along with the backcalculated values for the base, subbase, and subgrade layers. The PCC modulus values are shown in Table 4. A value of 5,000,000 psi was used for a PCC layer in good condition.

The ability of the joints in the PCC slabs to transfer load is measured with the FWD device. The ratio of deflections measured on each side of the joint (deflection of unloaded side/deflection of loaded side) is related to joint efficiency or load transfer. Joint test were conducted at select locations on the PCC pavements. Table 5 shows the summary of joint ratio test on PCC pavements.

Dynamic Cone Penetrometer Tests

A DCP soil test device was used to obtain subsurface soil data at representative locations. The DCP is a steel cone attached to the end of a metal rod on the other end of which is located an 17.6-lb sliding drophammer. For this investigation, a l-in. hole was cored through the AC or PCC material. The cone of the DCP was then placed on top of the base and the hammer was dropped repeatedly to drive the cone through the underlying pavement layers. The material resistance to penetration was recorded in terms of millimeters penetrated per hammer blow. California Bearing Ratios (CBR) were then determined based on a correlation and procedure recommended in Webster, Grau, and Williams (1992). DCP tests were performed at 9 locations on the airfield. The results of the DCP tests are best illustrated on a plot of CBR versus depth for each test location. Figures 29 through 37 show these data for the tests performed on the facilities.

Traffic Analysis

The projected performance of the airfield pavement facilities was analyzed for a lo-year design period for five standard Navy aircraft categories represented by the following aircraft: F-14 (single gear), P-3 (dual gear), C-130 (single tandem), C-141 (dual tandem), and C-5A (twin delta tandem). The yearly traffic was based on the information provided by the installation. This data is shown in Table 6.

Aircraft included in the traffic mix were grouped according to gear type. The equivalent number of "representative aircraft" passes were determined for each group using procedures outlined in DM 21.3/TM 5-825-2/ AFM 88-6, Chap. 2 (Headquarters, Departments of the Navy, the Army, and the Air Force 1978) and are shown in Table 7. The critical gear type was then determined for the traffic mix represented by the five standard aircraft types. The passes for each gear type were converted to an equivalent number of controlling gear passes to determine the percentage of the total traffic

represented by each gear type. The controlling gear is that associated with a critical aircraft. The critical aircraft is defined as that aircraft within a mixture of various aircraft operating at a facility which will impose a more severe combination of gear load and tire pressure than the other aircraft in the mix based upon the gross loads, tire pressure, landing gear type, and number of repetitions of each aircraft. The procedure will for any projected aircraft traffic mix, determine the critical aircraft within the mix and compute the number of passes of the critical aircraft required to produce an equivalent effect on the pavement as the total mixture of traffic. The design pass levels for each standard group were adjusted for the allowable load computations such that the portion of the total pavement life that will be used over the lo-year design period will be proportional according to the percent usage by the individual gear types.

$$\text{Adjusted Passes}_{\text{Group N}} = \frac{\text{Actual Passes for Group N}}{\text{Percent of Total Traffic for Group N}}$$

Table 8 presents the summary of computed critical aircraft and design traffic levels. Figure 39 presents the traffic distribution and traffic mix location.

During contingency planning, there is often the need to determine the largest possible aircraft that can safely land on the airfield, generally controlled by the length of the runway. Minimum take-off distances for maximum take-off weights of aircraft are also given in ETL 1110-3-394 (Headquarters, Department of the Army 1991). Once the aircraft is known, the ACN of that aircraft can be determined from the ACN-PCN curve and then the effect of the higher loads on the airfield can be determined from the ACN/PCN ratio and pavement life used curves.

PCN Analysis

The load-carrying capacity of the pavement (PCN) and required strengthening (in terms of overlay thickness) for each pavement feature was determined from the computer program in accordance with TM 5-826-U AFJMAN 32-1036/DM 21.7 (Headquarters, Departments of the Army, the Air Force, and the Navy Draft). The input parameters were the modulus values for pavement surface, base and subgrade materials (determined from NDT analysis and correlated with the results of previous field or laboratory testing of these materials) and the five Navy aircraft categories determined from traffic analysis using the allowable gross aircraft load.

4 Results and Recommendation

General

Steps 1 through 5 of the flowchart shown in Illustration 9 were used in determining the recommendations suggested in Table ES-l. Recommendations for structural improvements are based on results from the structural evaluation. The evaluation may indicate a particular feature needs repair and/or improvement. If the ACN/PCN determined for the critical aircraft is greater than one, the pavement needs structural improvement. The PCI, ACN/PCN and recommended general maintenance alternatives for each feature are shown in Table ES-l, the Airfield Pavement Evaluation General Summary. The PCI listed in Table ES-l are the results of the 1996 pavement condition survey performed by the Naval Facilities Engineering Command. The results of both the structural analysis and PCI survey should be evaluated concurrently in order to determine the optimum time to apply required maintenance and perform required strengthening of the pavement.

Recommendations for structural improvements have been defined in terms of overlays required to strengthened the pavement to carry the projected traffic over a lo-year period. In some instances overlays may not be the most cost effective or best engineering alternative for pavement strengthening. In many instances, the performance of a specific alternative depends upon the geographical location and expertise of local contractors. Therefore, it is suggested that the local installation personnel review all recommendations. Local costs for the approved alternatives can then be used with the Micro PAVER program, or other cost estimating means, to obtain a reasonable cost estimate. It should be noted that the overlay requirements shown in Table 9 were determined based on representative conditions at the time of testing and should be considered minimum values until verified by further investigation. These overlays should be used as a guide when programming funds for design projects. A thorough pavement analysis and design should be completed to select the most cost effective improvement technique. All designs should be reviewed by the Naval Facilities Engineering Command to ensure that they are in accordance with current design criteria.

Recommended overlay thicknesses follow the criteria for minimum thickness contained in MIL-HNDBK 1021/3 and 4. Where calculated thicknesses

are greater than the minimum thicknesses, the values were rounded up to the next 0.5 in. The minimum thicknesses are as follows:

Overlays on Rigid Pavements	
Unbonded Concrete Overlay	8 in.
Bonded Concrete Overlay	3 in.
Partially Bonded Concrete Overlay	6 in.
AC Overlay	6 in.

Overlays on Flexible Pavements	
AC Overlay	2 in. by practice

These minimum overlay requirements are required to control the degree of cracking which will occur in the base pavement (existing pavement) due to the application of the design traffic. If those features needing structural improvements do not receive the required strengthening, the rate of deterioration can be quite rapid leading to damage in all pavement layers. This will generally cause dramatic increases in cost of later treatments after failure has occurred. It may also cause the pavement to be closed for operations for a considerable period of time.

Structural Capacity and Condition Ratings of Pavement Features

Runways 1 l-29, 02-20 and 07-25

Runways 1 l-29 and 02-20 are structurally adequate to withstand 10 years of projected day-to-day operations. Runway 07-25 is closed as an active runway, but is structurally adequate to withstand 10 years of projected day-to-day operations.

The PCN for the controlling aircraft is 109/F/C/W/T, 68/F/B/W/T and 70/F/C/W/T for Runways 1 l-29, 02-20, and 07-25, respectively.

The general condition rating for all of the runway features is excellent.

Aircraft Acoustical Enclosure Apron and Taxiway

Features AAE-1 and AAE-2 are structurally adequate to withstand 10 years of projected day-to-day operations.

The PCN for the controlling aircraft is 59/F/C/W/T and 66/R/B/W/T for features AAE-1 and AAE-2, respectively.

The general condition rating for features AAE-land AAE-2 is excellent.

Keflavik Apron Taxiway

Features KAT-1 and KAT-2 are structurally adequate to withstand 10 years of projected day-to-day operations.

The PCN for the controlling aircraft is 69/R/B/W/T and 78/F/B/W/T for features KAT-1 and KAT-2, respectively.

The general condition for feature KAT-1 is good and feature KAT-2 is excellent.

Taxiway Alpha and Alert Hangar Aprons

Feature TA-1 is structurally adequate to withstand 10 years of projected day-to-day operations. Features AHA-1 and AHA-2 require structural improvement to withstand 10 years of projected day-to-day operations.

The PCN for the controlling aircraft are 41/F/B/W/T, 31/R/C/W/T and 28/F/B/W/T for features TA-1, AHA-1 and AHA-2, respectively.

The general condition rating for Taxiway Alpha is excellent and the condition rating for the Alert Hangar Apron is good.

Taxiway Charlie

Taxiway Charlie require structural improvement to withstand 10 years of projected day-today operations. Feature TC-2 requires substantial improvement to withstand 10 years of operations, while the overlay requirements for feature TC-3 are less than the minimum requirements. Since the condition of the pavement is very good these overlays could be delayed without significant damage to the pavement. These pavements should be reevaluated in about 5-years.

The PCN for the controlling aircraft are 11/F/C/W/T and 66/F/C/W/T for features TC-2 and TC-3, respectively.

The general condition rating for feature TC-2 is failed and the condition rating for feature TC-3 is very good.

Taxiway Delta and Delta Hardstands

Features TD- 1, TD-2, DHS1-9-1 and DHS1-9-2 are structurally adequate to withstand 10 years of projected day-to-day operations.

The PCN for the controlling aircraft are 46/F/B/W/T, 44/F/B/W/T, 39/F/B/W/T and 55/F/C/W/T for features TD-1, TD-2, DHSl-9-l and DHS l-9-2, respectively.

The general condition rating is excellent for features TD-1, TD-2, DHS1-9-l and DHS1-9-2.

Taxiway Echo

Features TE-1 and TE-3 are structurally adequate to withstand 10 years of projected day-today operations. Features TE-2, TE-4 and TE-5 require structural improvement to withstand 10 years of projected day-to-day operations. Overlay requirements for these features are less than the minimum requirements. Since the condition of the pavement is good to very good these overlays could be delayed without significant damage to the pavement. These pavements should be reevaluated in about 5-years.

The PCN for the controlling aircraft are 69/F/C/W/T, 42/R/B/W/T, 69/F/C/W/T, 42/R/B/W/T and 64/F/C/W/T for features TE-1, TE-2, TE-3, TE-4 and TE-5, respectively.

The general condition rating for features TE-1 is very good. The general condition rating for features TE-2, TE-3 and TE-4 is excellent and the condition rating for feature TE-5 is good.

Taxiway Golf

Features TG-1 and TG-2A are structurally adequate to withstand 10 years of projected day-to-day operations.

The PCN for the controlling aircraft is 83/F/C/W/T and 66/R/B/W/T for features TG-1 and TG-2, respectively.

The general condition for feature TG-1 is excellent and feature TG-2 is very good.

Taxiway Hotel

Features TH-1 and TH-2 are structurally adequate to withstand 10 years of projected day-to-day operations. .

The PCN for the controlling aircraft is 3 1 /F/B/W/T for features TH- 1 and TH-2.

The general condition for Taxiway Hotel is excellent.

Taxiway Kilo and Hardstands

Feature KHS1-11-1 is structurally adequate to withstand 10 years of projected day-to-day operations. Features TK-1, TK-1 A, TK-2, TK-3 and KHS1-1 l-2 require structural improvement to withstand 10 years of projected

day-today operations. Overlay requirements for feature TK-2 are less than the minimum requirements. Since the condition of the pavement is excellent this overlay could be delayed without significant damage to the pavement. This pavement should be reevaluated in about S-years.

The PCN for the controlling aircraft is 36/F/C/W/T, 64/F/C/W/T, 22/F/B/W/T, 53/R/B/W/T and 39/F/D/W/T for features TK-1, TK-2, TK-3, KHS1-11-1 and KHS1-1 l-2, respectively.

The general condition for Taxiway Kilo ranged from fair to excellent and the condition rating for the hardstands was very good.

Taxiway November

Features TN-l, TN-2, TN-3, TN-5 and TN-6 are structurally adequate to withstand 10 years of projected day-to-day operations.

The PCN for the controlling aircraft is 106/F/A/W/T, 86/F/A/W/T, 63/F/A/W/T, 75/F/C/W/T and 97/F/C/W/T for features TN-l, TN-2, TN-3, TN-5 and TN-6, respectively.

The general condition rating for features TN-l, TN-2, TN-3 and TN-6 is excellent and the condition rating of feature TN-S is poor.

Taxiway Sierra

Features TS-1, TS-2, TS-3 and TS-4 are structurally adequate to withstand 10 years of projected day-to-day operations.

The PCN for the controlling aircraft is 77/F/A/W/T, 131/F/A/W/T, 76/F/B/W/T and 81/F/B/W/T for features TS-1, TS-2, TS-3 and TS-4, respectively.

The general condition rating for Taxiway Sierra is excellent.

Civilian Terminal Apron

Features CTA-1A, CTA-1B and CTA-2 are structurally adequate to withstand 10 years of projected day-to-day operations. Feature CTA-1C requires structural improvement to withstand 10 years of projected day-to-day operations.

The PCN for the controlling aircraft is *67/F/C/W/T*, 86/F/B/W/T, 40/F/D/W/T and 51/R/C/W/T for features CTA-1A, CTA-1B, CTA-1C and CTA-2, respectively.

The general condition rating for features CTA-1A and CTA-2 is very good and the condition rating for features CA-1B and CTA-1C is good.

Arm-Dearm Apron

The Arm-Dearm apron is structurally adequate to withstand 10 years of projected day-to-day operations.

The PCN for the controlling aircraft is 85/R/A/W/T and 39/F/B/W/T for features DA-l and DA-2, respectively.

The general condition rating for the Arm-Dearm Apron is excellent.

Hold Areas

Feature HA25-1 is structurally adequate to withstand 10 years of projected day-to-day operations. Features HA 1 l-l, HA20-1 and HA29-1 requires structural improvement to withstand 10 years of projected day-to-day operations.

The PCN for the controlling aircraft is 27/F/C/W/T, 27/F/C/W/T, 41/F/B/W/T and 30/F/A/W/T for features HA11-1, HA20-1, HA25-1 and HA29- 1, respectively.

The general condition rating for the Hold Areas ranged from fair to good.

Hot Cargo Apron

The Hot Cargo Apron is structurally adequate to withstand 10 years of projected day-to-day operations.

The PCN for the controlling aircraft is 67/R/B/W/T for feature HCA-1.
The general condition rating for the Hot Cargo Apron is excellent.

Keflavik Apron

Feature KA-1 requires structural improvement to withstand 10 years of projected day-to-day operations. Feature KA-2 is structurally adequate to withstand 10 years of projected day-to-day operations.

The PCN for the controlling aircraft is 48/F/B/W/T and 80/F/C/W/T for features KA-1 and KA-2, respectively.

The general condition for KA-1 is good and the condition rating for KA-2 is very good.

Maintenance Hangar Apron

The Maintenance Hangar Apron is structurally adequate to withstand 10 years of projected day-to-day operations.

The PCN for the controlling aircraft is 59/R/B/W/T for feature MHA-1.

The general condition rating is very good for MHA-1.

North Cargo Apron

The North Cargo Apron is structurally adequate to withstand 10 years of projected day-to-day operations.

The PCN for the controlling aircraft is SO/R/C/W/T and 85/F/B/W/T for features NCA-1 and NCA-2, respectively.

The general condition rating for the North Cargo Apron is excellent.

Operations Apron, Hangar 780 Apron, and Hangar 781 Apron

Features OA-1, OA-2 and OA-3 are structurally adequate to withstand 10 years of projected day-to-day operations.

The PCN for the controlling aircraft is **75/R/B/W/T,** 58/R/A/W/T and 58/R/A/W/T for features OA-1, OA-2 and OA-3, respectively.

The general condition rating was very good, excellent and very good for features OA-1, OA-2 and OA-3, respectively.

Protective Shelters

Feature PSA-1 is structurally adequate to withstand 10 years of projected day-to-day operations. Feature PSA-2 requires structural improvement to withstand 10 years of projected day-to-day operations. Overlay requirements for feature PSA-2 are less than the minimum requirements. Since the condition of the pavement is excellent this overlay could be delayed without significant damage to the pavement. This pavement should be reevaluated in about 5-years.

The PCN for the controlling aircraft is 38/R/B/W/T and 28/F/C/W/T for features PSA-1 and PSA-2, respectively.

The general condition for feature PSA-1 is very good and the condition rating for feature PSA-2 was excellent.

West Apron

Features WA-l, WA-2 and WA-3 are structurally adequate to withstand 10 years of projected day-to-day operations.

The PCN for the controlling aircraft is 56/R/B/W/T, 48/R/A/W/T and 66/R/A/W/T for features WA-l, WA-2 and WA-3, respectively.

The general condition rating was very good for feature WA-l and good for features WA-2 and WA-3.

ACN-PCN Results

The ACN-PCN curves developed for the five standard Navy aircraft categories are shown in Figures 40 through 44. Table 9 presents a summary of the evaluation of each pavement feature in terms of allowable gross aircraft loadings, PCN, and additional strengthening requirements, in terms of overlay thickness, to increase the PCN to equal the current ACN. The overlays are computed for the controlling gear type and total equivalent passes to include the effects of the entire traffic mix shown in Table 8. Note that pavements requiring structural improvement (overlays) can perform for the next 10 years without an overlay if aircraft allowable gross loads do not exceed that value derived from the pavement PCN using the ACN-PCN curves shown in Figures 40 through 44.

The APEC chart (Illustration 3) will be forwarded by NavFac for publication in the DOD Flight Information Publication Enroute (FLIP) IFR-Supplement. This chart reflects the greatest PCN values that have been determined for the five standard Navy aircraft. These PCN values are intended to be used by the station Airfield Manager to determine the effect of transient aircraft traffic (i.e., not having repeated or concentrated loading of station-assigned or Civilian Air Terminal). The Airfield Manager should bear in mind that occasional traffic with ACN/PCN ratios exceeding 1 .O will not result in sudden noticeable damage, but will result in accelerated fatigue of the pavement.

The PCN charts referencing the standard Navy aircraft (Illustrations 4 through 8) are for use by the station Airfield Manager to determine where aircraft should taxi and park on a day-to-day basis. Use of these charts will enable the effect of repeated loadings due to present or projected station-assigned or 'mission' aircraft traffic to be determined for individual pavements sections. Civilian Air Terminal traffic and temporary military deployments of aircraft to NAS Keflavik should be evaluated using these charts. Recognizing that it is difficult to keep track of the ever-changing status of the pavement in terms of 'percent design life used,' it is recommended that in determining if traffic may use a pavement, the ACN/PCN value not be allowed to exceed 1.10.

The PCN codes for the five standard gear types for each pavement facility during normal operations are shown in Table 9. The PCN codes include the PCN numerical value, pavement type, subgrade category, allowable tire pressure, and method used to determine the PCN. An example of a PCN code is: 55/R/C/W/T, with 55 expressing the numerical PCN value, R indicating a rigid pavement, C indicating low strength subgrade, W indicating

high-allowable tire pressure, and T indicating that the PCN value was obtained by a technical evaluation. Table 10 presents a description of all the letter codes comprising the PCN code. Each PCN assumes that only the design aircraft will be used for the stated number of passes. For each traffic mix, relationships were developed for pavement life as a function of the ratio of ACN to PCN. Theoretically, if the PCN is equal to the ACN, the pavement should perform with only routine maintenance through the length of the analysis period. There may be situations when operators have to overload a pavement, i.e., the ACN is greater than the PCN. Pavements can usually support some overload, however; pavement life is reduced. If the PCN equals the ACN, the ratio of the ACN to the PCN (ACN/PCN) equals 1, and the pavement is expected to perform satisfactorily until the end of the analysis period. For an ACN/PCN ratio greater than 1, the pavement would be expected to fail before reaching the end of the analysis period. Figures 45 through 48 can be used to estimate the amount of pavement life used by 1 operation at a specified overload (ACN/PCN > 1). An example of how the ACN/PCN figures are used are shown below.

Example Problem

A cargo mission has been assigned to the fixed-wing facility. Aircraft traffic is projected to be 300 passes of a 345-kip C-141.

a. What is the ACN for the aircraft?

b. Will the fixed-wing facility be overloaded?

c. If the airfield facility is overloaded, how much of the pavement life will be utilized during this mission?

Solution

The critical primary pavement used by heavy aircraft is KA-1 on the Keflavik Apron. The PCN for feature KA-2 and the dual tandem gear type (C-141), is 48/F/C/W/T (Table 9).

a. The ACN determined from ETL 1110-3-394, of a 345-kip C-141 on a flexible pavement over a low strength subgrade is 66/F/C/W/T.

b. The airfield will be overloaded, the ACN/PCN is 66/48 or 1.4.

c. From Figure 48, the percent life used for an ACN/PCN of 1.4 and traffic mix 8 is 0.2 percent for 1 pass. Thus, 300 passes at will use approximately 60 percent of the pavement life.

References

American Society of Testing and Materials. (1994). "Standard test method for airport pavement condition index surveys," Designation: D 5340-93, Philadelphia, PA.

Headquarters, Department of the Army. (1991). "Engineering and design aircraft characteristics for airfield-heliport design and evaluation," Engineering Technical Letter ETL 1110-3-394, U.S. Army Corps of Engineers, Washington, DC.

Headquarters, Departments of the Army, the Air Force and the Navy. (1978). "Flexible pavement design for airfields," Technical Manual TM 5-825-2/DM 21.3/AFM 88-6, Chap. 2, Washington, DC.

_____. (Draft). "Airfield pavement evaluation" Technical Manual, TM 5-826-1/AFJMAN 32-1036/DM 21.7, Washington, DC.

Headquarters, Departments of the Navy . (1973). "General concepts for airfield pavement design" Military Handbook, MIL-HDBK-1021/2, Washington, DC.

_____. (1973). "Rigid pavement design for airfields" Military Handbook, MIL-HDBK-1021/4, Washington, DC.

Appendix E

Recommended Methods for Joint and Crack Repair

RECOMMENDED METHOD FOR JOINT AND CRACK REPAIR

A. CLEAN AND RESEAL LONGITUDINAL AND TRANSVERSE JOINTS IN PCC

Thoroughly clean joints of old sealing material and other foreign material using a joint plow to remove the bulk of the material. Widen joints less than 3/8 inch wide to a uniform width of least dimension possible (typically 3/8 inch wide not to exceed 5/8 inch wide) using a concrete saw and sandblasting equipment. Reface and clean the sides of the joints by sandblasting to expose sound concrete free of oils and old sealants. Thoroughly dry the joints by compressed air immediately prior to application of new a NAVFAC approved Low Modulus Silicone sealant and compatible bond breaker (closed-cell, expanded polyethylene foam backer rod or non-reactive tape, as joint geometry dictates).

B. ROUT, CLEAN AND SEAL LONGITUDINAL AND TRANSVERSE CRACKS IN PCC

Rout cracks with a power rotary routing tool to a uniform depth between 1/2 inch and 3/4 inch and a minimum of 3/8-inch width in order that the new sealant can be applied. Sandblast the routed crack to obtain clean sound concrete on the exposed vertical crack faces and on the adjacent pavement to I inch on each side of the routed crack. Immediately prior to sealing, thoroughly dry and clean with compressed air. Seal cracks to within 3/16-inch +/-1/16 inch of the surface with a NAVFAC approved low Modulus Silicone sealant.

C. ROUT, CLEAN AND SEAL LONGITUDINAL AND TRANSVERSE CRACKS IN AC

NOTE 1: This does not apply to cracks having alligator cracking or along their length, or where the area of cracks coverage on the pavement is so great that sealing by hand is not economical.
NOTE 2: Joint sealants utilized on airfield pavements shall be in accordance with NAVFAC MO-102.6. “Asphalt Crack Repair Field Manual".

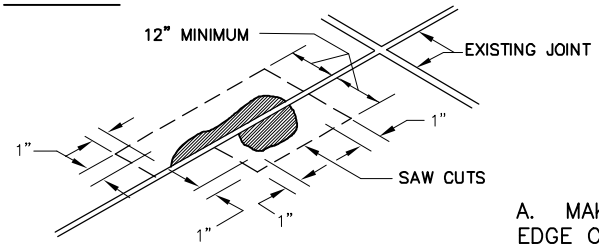
1.Small cracks (under 1/4 inch). Only if determined necessary to seal this size crack using sealant does the following apply. Widen to a uniform width of 1/4 to 3/8 inch. The depth of the routed crack should be approximately 1/2 inch. Clean dirt, water, and other foreign material by application of compressed air under not less than 90 psi pressure. Ensure crack is dry prior to sealing. Do not overfill the crack above the surrounding pavement.

2.Medium cracks (1/4 to 2 inches). Clean the crack of dirt, water, and other foreign material by application of compressed air under not less than 90 psi and ensure the crack is dry prior to sealing. If the depth of the crack is sufficient to effectively hold a backer rod and the sealant, consider the use of the backer rod to save on the amount of sealant used.

3.Large cracks (greater than 2 inches). Square the cracks by sawing to provide vertical edges, then clean by blasting with compressed air. Joint sealant does not perform well in cracks exceeding 2-inches width, therefor fill the crack with a lean sand-asphalt mixture (containing not less than 5 percent asphalt) or fine-graded asphalt. Ensure the crack is dry prior to filling. Fill and compact the mix to leave the pavement surface smooth, uniform and even with the surrounding pavement.

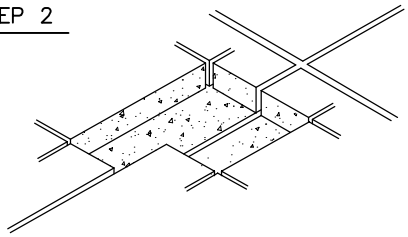
RECOMMENDED METHOD FOR SPALL REPAIRS

STEP 1



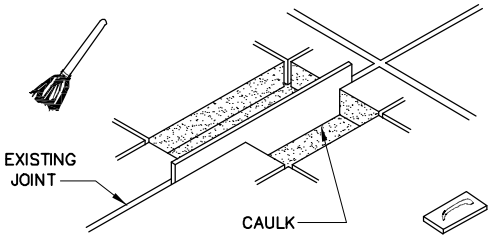
A. MAKE SAW CUT AT LEAST 1 INCH BEYOND THE OUTER EDGE OF THE AREA OF DAMAGED CONCRETE, SAWING NOT LESS THAN 3 INCHES DEEP.

STEP 2



A. REMOVE ALL SPALLED PCC DOWN TO FIRM SOUND CONCRETE (INDICATED BY A RINGING TONE WHEN TAPPED WITH A STEEL BAR), PROVIDING A MINIMUM OF 2.5 INCHES DEPTH OF CONCRETE REMOVAL. REMOVE ALL LOOSE MATERIAL AND DUST FROM THE AREA BY AIR BLASTING.

STEP 3



A. MAINTAIN THE WORKING JOINT BY USE OF A FIBERBOARD OR OTHER SUITABLE INSERT MATERIAL. CAULK THE BASE OF THE INSERT TO PREVENT MATERIAL FROM ENTERING THE VOID AREA BETWEEN THE INSERT AND THE CONCRETE TO REMAIN. OILS, WAXES, GREASE, OR SILICONES SHOULD NOT BE USED ON THE INSERT SINCE BONDING OF THE JOINT SEALING MATERIALS WOULD BE PREVENTED.

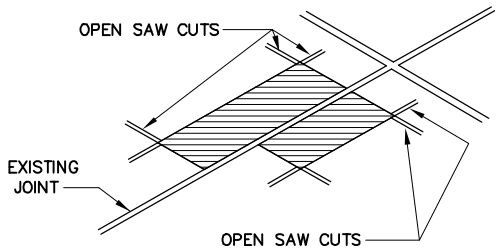
B. THOROUGHLY CLEAN THE AREA BY AIR JET TO REMOVE ALL RESIDUAL FINES. CAREFULLY CHECK THAT NO TRACE OF OIL, GREASE, OR MATERIALS THAT WOULD PREVENT CONCRETE FROM BONDING ARE PRESENT.

C. IMMEDIATELY PRIOR TO PLACEMENT OF NEW CONCRETE, THE SURFACE OF THE CAVITY (EXCEPT THE FACE OF THE WORKING JOINT) SHALL BE COATED WITH EPOXY BINDER. APPLY THE BINDER IN A RELATIVELY THIN COAT SCRUBBED INTO THE CONCRETE SURFACE WITH A STIFF BRISTLE BRUSH.

D. PLACEMENT OF THE CONCRETE SHALL BE STARTED IMMEDIATELY UPON THE APPLIED BINDER BECOMING "TACKY".

E. CAREFULLY REMOVE THE INSERT BEFORE THE CONCRETE HARDENS TO A HIGH BOND. SLIGHTLY TOOL THE EDGES.

STEP 4



A. FINISH CONCRETE TO GRADE. EXCESS MORTAR OR BINDER CARRIED OVER THE PAVEMENT SHALL BE REMOVED. FINALLY, OPEN SAW CUTS ARE TO BE FILLED WITH A SAND AND EPOXY RESIN BINDER.

Appendix F

Void Detection Policy

The following is a reprint of the "Interim Policy and Technical Guidance for Void Detection" that was issued by the Chief Engineer, NAVFACENGCOM.

DEPARTMENT OF THE NAVY
Naval Facilities Engineering Command

23 Mar 00

From: Commander, Naval Facilities Engineering Command

Subj: NAVAL FACILITIES ENGINEERING COMMAND INTERIM POLICY AND TECHNICAL GUIDANCE FOR AIRFIELD PAVEMENT VOID DETECTION, REPAIR AND PREVENTION

Encl: (1) Amplification on NAVFAC Interim Technical Guidance for Airfield Pavements Void Detection, Repair and Prevention
(2) Naval Facilities Engineering Command Airfield Pavements Users Group

1. Purpose. To establish engineering policy and technical guidance to minimize the risk of subsurface voids to the structural integrity of airfield pavements, and reduce the probability of facility related hazards to aviation.

2. Policy. NAVFAC will maintain, and make available to aviation claimants, the best technology accessible through consultations and engineering services to facilitate the incorporation of void prevention and detection in airfield maintenance and renewal programs.

3. Background. Airfield pavements have failed under the load of taxiing aircraft because of undetected subsurface voids from soil erosion in the vicinity of drainage pipes. Such mishaps are extremely hazardous to life and aircraft. NAVFAC Engineering Field Divisions and the Naval Facilities Engineering Service Center, together with Public Works personnel, conduct periodic condition surveys for Claimants in managing their pavements. The current structural capacity and surface pavement condition evaluation protocols do not include explicit and mandatory inspections for subsurface erosion and related drainage conditions that cause voids.

4. Technical Guidance. Periodic inspections, using best available tools and experienced engineers, must be conducted at intervals consistent with the local susceptibility of airfields to void formation. Broken drainage pipes and excessive water entry to pavement foundation soils must be repaired and prevented to reduce the likelihood of void formation. Advanced technology shall be screened for unsubstantiated claims. NAVFC will accelerate development of appropriate technology. Enclosure (1) amplifies on methods, procedures, roles and responsibilities.

5. Funding. Claimant Maintenance and Repair (M&R) resources shall be used for activity specific consultations, engineering services, and for Claimant wide condition and structural surveys extended to include void detection and prevention. NAVFAC components shall assist and coordinate with Claimants in planning and programming for void surveys.

6. Action. NAVFAC components will initiate actions to assist Claimants in: (a) identifying their operational and technical requirements, (b) planning for resources for airfield void detection, prevention and repair, (c) disseminating best available technology, and (d) selective development and validation of advanced technology.

7. Point of Contact. If you have questions, please call the local NAVFAC Engineering Field Division Pavement Team point of contact listed in enclosure (2). The NAVFAC Criteria Office Special Assistant for Pavement, Mr. Vince Donnally, can provide assistance in clarifying these policies and standards.

DR. GET W. MOY, P.E.
Chief Engineer and Director,
Engineering and Base Development

Distribution:
CO, PACNAVFACENGCOM
CO, LANTNAVFACENGCOM
CO, SOUTHWESTNAVFACENGCOM
CO, SOUTHNAVFACENGCOM
CO, NORTHNAVFACENGCOM
CO, ENGFLDACT WEST
CO, ENGFLDACT CHES
CO, ENGFLDACT NW
CO, ENGFLDACT MED
NFESC
NFESC East
CO, PWC WASHINGTON
CO, PWC PEARL HARBOR
CO, PWC GREAT LAKES
CO, PWC PENSACOLA
CO, PWC NORFOLK
CO, PWC SAN DIEGO
CO, PWC JACKSONVILLE
CO, PWC GUAM
CO, PWC YOKOSUKA

Copy to:
Internal List 1

AMPLIFICATION ON NAVFAC INTERIM TECHNICAL GUIDANCE FOR AIRFIELD PAVEMENTS VOID DETECTION, REPAIR AND PREVENTION
23 March 2000

Ref: (a) "Airfield Pavement Void Detection, NAS Pensacola," Site Specific Report SSR-2534-SHR, Naval Facilities Engineering Service Center, Port Hueneme, CA, December 1999, by Malvar, L.J., Lesto, J., Cline, G., and Beverly, W.

Attachment: (1) Naval Facilities Engineering Command Airfield Pavement Users Group

Purpose. Provide methodology and technical guidance for determining the risk of pavement failure from undetected subsurface voids. The assessment is intended for application at all Navy and Marine Corps airfields. The objective is to provide cost-effective and reliable methods to minimize the potential for accidental airfield pavement failure due to subsurface voids.

Background. Pavement failure due to subsurface voids has resulted in aircraft accidents at Navy airfields, causing concerns for potential accident and threat to life safety in the future, as facilities age and resources for maintenance and repair become more scarce. Reference (a), available at http://intranet.nfesc.navy.mil/apvdt.htm, describes recent evaluation of available technology using tri-service equipment and personnel in the development of a methodology to detect such subsurface weaknesses. The approach used a combination of destructive and non-destructive testing. While the detection protocols that emerged are specifically addressed to pavements above drainpipe crossings, the methods can be applied elsewhere.

Technical Guidance.

1. Void Detection

a. Visual inspection of the airfield pavements should be performed with frequency sufficient to locate potential problem areas and satisfy the airfield manager its operational safety. Such inspections shall monitor pavements for conditions that may affect aircraft movement (FOD, depressions, pavement deterioration, etc.). Frequency should be determined by local physical conditions and operational tempo as to minimize the hazards. In flexible pavements, depressions are evident after a rainfall, or by the concentric marks left by the evaporated water. In rigid pavements, standard 12½ by 15-ft concrete slabs cracked into two or more pieces, as well as slabs that exhibit faulting at joints, may indicate underlying soft spots or voids. In particular, areas above drainpipe crossings should be carefully inspected since most problems appear near these pipes. Problems observed in unpaved areas above a pipe are early warning signs of problems in nearby paved areas above the same pipe. Depressed pavement or shattered slabs surrounding drainage structures (catch basins) indicate infiltration of soil materials into the structure or pipe. Visual inspections can also follow Pavement Condition Index (PCI) guidelines,

as detailed in NAVFAC MO-102 Manuals, and as detailed in ASTM Standards commonly available.

b. If visual inspection suggests concern, further evaluation using a Heavy Weight Deflectometer (HWD) should be performed. The HWD investigation would cover all pipe crossings and additional suspect areas, following the procedure indicated in SP-2534-SHR. It can be found on the website http://intranet.nfesc.navy.mil/apvdt.htm. The HWD will establish the effect of any subgrade weakness (or void) on the load-carrying capacity of the pavement. HWD evaluations can be performed by the cognizant NAVFAC Engineering Field Division Airfield Pavement Design/Evaluation Team listed in enclosure (2). Periodic testing with a HWD is recommended at all pipe crossings. This HWD testing can be completed at the same time as the standard Pavement Classification Number (PCN) structural evaluation cycle, as described in Headquarters, Department of the Army, Air Force and Navy, "Airfield Pavement Evaluation" Technical Manual, TM 5-826-1/AFJMAN 32-1121/DM 21.7, Washington, DC, December 1998.

c. Weak areas revealed by the HWD should be further tested to determine the depth of the weakness in order to determine the type of repair needed. This testing can be completed using either a Dynamic Cone Penetrometer (DCP), Electronic Cone Penetrometer (ECP), or Standard Penetration Test (SPT). Video taping the interior of pipe crossings is recommended when testing and/or visible failure is evident in or around pipe crossings. It will help pinpoint the location of potential problem areas and define the need for maintenance and repair. Special attention should be paid to assessing pipe crossings and joints. Accumulations of fines near joints or other penetrations are a good indicator of a loss of subgrade material and possibly subgrade strength. Naval Facilities Engineering Command "Design Manual 21.06 – Airfield Pavement Design for Frost Conditions and Subsurface Drainage" draft August 1999 (final expected to be issued by May 2000) provides discussion on video inspection of subsurface drainage utilities. In some cases, coring of the pavement may be required to confirm presence of voids directly below the pavement surface.

d. Alternate non-destructive techniques are currently being evaluated, but are not believed to be as effective as the aforementioned tools in determining the existence of voids. Ground Penetrating Radar (GPR) cannot be used as a reliable tool to predict weak areas and GPR should not be used for void detection at this time. However, GPR appears successful in locating the actual location of drainpipes and thickness of pavement layers, and potentially could be used to verify the extent of known voids.

e. Based on experience to date approximately, and in the absence of more specific information, approximately $75,000 should be used for programming purposes for a one-time evaluation of all drainage pipe crossings of typical air stations.

2. Void Repair and Prevention

a. Repair methods are now available from the cognizant NAVFAC Engineering Field Division Pavement Design/Evaluation Team. Methods include pressures grouting, excavation, filter materials, compaction, and quality control

b. Designs and practices to prevent the onset or growth of voids are also available from the cognizant NAVFAC Engineering Field Division Pavement Design/Evaluation Team.

c. Because of the complex nature of the hydrologic and geotechnical aspects of subsurface erosion and the threat of undetected voids to high value manned aircraft, work of void prevention, detection and repair should be considered Type 1 (as per NAVFAC Policy document dated 31 December 1998) in order to draw from the cumulative experiences of several EFD/NFESC specialists.

NAVFAC components will:

(1) Make available expert technical assistance to air stations in implementing visual inspections and interpretation procedures.
(2) Make available to air stations the EFD/NFESC combined HWD and DCP capability to detect the location and severity of voids/soft conditions in the pavement foundation soils when needed
(3) Make available to air stations consulting services for the development of a risk and cost based plan for inspection, prevention and repairs to reduce hazards from undetected conditions.
(4) Recommend, in the absence of other compelling reasons, the conduct of complete evaluation of all pavements, at drainage pipe crossings when performing (every 8 years) the PCN structural evaluation survey. This will establish the risk prioritization and requirements for funding.
(5) Periodically validate claims of advanced technology, demonstrate suitability for adoption and use, and collaborate with research and development organizations for selective and focused development – generally in concert with the Tri-Service Pavements Group.
(6) Maintain appropriate cost data and provide to stations economic basis for actions.
(7) Pursue the maintenance of reciprocal, interdependent and sharing practices to optimize the accumulation of experience (for core competence learning) and the distributed availability of knowledge for use minimally within the DON and ultimately among public airfield operators and engineers.
(8) Maintain an effective, easily accessible database of knowledge and criteria along with other airfield engineering information.
(9) Report all conditions suggesting water entry, erosion, softness, loss of load capacity, and voids to air station and EFD authorities for Type 1 response action.
(10) Disseminate this guidance document to all aviation claimant commands and their activity level pavement engineers.

Points of Contact. If you have questions, enclosure (2) provides the NAVFAC Engineering Field Division Pavement Design/Evaluation Team.

NAVAL FACILITIES ENGINEERING COMMAND
AIRFIELD PAVEMENT USERS GROUP POINTS OF CONTACT
23 March 2000

Name/Code	Address	E-mail	Telephone
Vincent Donnally NAVFAC Code 15	Naval Facilities Engineering Command NAVFAC Criteria Office 1510 Gilbert Street Norfolk, Va. 23511-2699	Donnallyvr@efdlant.navfac.navy.mil	(757) 322-4204
Dr. Arthur H. Wu NFESC Code 007	Naval Facilities Engineering Service Center, East Coast Detachment Washington Navy Yard 1435 10th Street SE, Suite 3000 Washington, DC 20374-5005	WuAH@nfesc.navy.mil	(202) 433-8759
Darrell Bryan NAVFAC LANTDIV	Atlantic Division Naval Facilities Engineering Command 1510 Gilbert Street Norfolk, Va. 23511-2699	Bryandg@efdlant.navfac.navy.mil	(757) 322-4411
Greg Cline NFESC Code 63	Commanding Officer NFESC Code 63 1100 23RD Ave. Port Hueneme, CA 93043-4370	Clinegd@nfesc.navy.mil	(805) 982-3655
Dr. Javier Malvar NFESC Code 63	Commanding Officer NFESC Code 63 1100 23RD Ave. Port Hueneme, CA 93043-4370	Malvarlj@nfesc.navy.mil	(805) 982-1447
Charles J. Schiavino NFESC Code 63	Naval Facilities Engineering Command Northern Division 10 Industrial Highway Mail Stop #82 Lester, Pa. 19113-2080	Schiavinocj@nfesc.navy.mil	(610) 595-0597
Wilbert Beverly NAVFAC SOUTHDIV	Naval Facilities Engineering Command Southern Division 2155 Eagle Drive North Charleston South Carolina 29418	Beverlyw@efdsouth.navfac.navy.mil	(843) 820-7352
Noland Araracap NAVFAC SOWESTDIV	Naval Facilities Engineering Command South Western Division 1220 Pacific Highway San Diego, California 92132	AraracapNA@efdsw.navfac.navy.mil	(619) 532-4646

Enclosure (2)

NAVAL FACILITIES ENGINEERING COMMAND
AIRFIELD PAVEMENT USERS GROUP POINTS OF CONTACT
23 March 2000

Name/Code	Address	E-mail	Telephone
Mike Tsuru NAVFAC PACDIV	Naval Facilities Engineering Command Pacific Division Building 258 Makalapa Dr., Suite 100 Pearl Harbor Hawaii 96860	TsuruMT@efdpac.navfac.navy.mil	(808) 474-5382
Carl Cheng NAVFAC PACDIV	Naval Facilities Engineering Command Pacific Division Building 258 Makalapa Dr. Suite 100 Pearl Harbor Hawaii 96860	KarlCheng@efdpac.navfac.navy.mil	(808) 474-5385
Eldon M. Jemtrud EFA West	Naval Facilities Engineering Command Engineering Field Activity West Naval Facilities Engineering Command 800 Commodore Drive San Bruno, CA 94066-2042	emjemtrud@efawest.navfac.navy.mil	(650) 244-2743 DSN 494-2743
Dennis Scheessele EFA Chesapeake	Naval Facilities Engineering Command Engineering Field Activity Chesapeake Washington Navy Yard 851 Sicard Street SE Washington, DC 20374-5018	Scheesseledj@efaches.navfac.navy.mil	(202) 685-3131